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**Key Takeaways**

* A survey of poverty indicators surfaced 139 candidates, of which 36 were ultimately selected for inclusion in the study based on indicator construction, use, and timeliness.
* The selected 36 poverty indicators relied primarily on 26 data sources, mainly household surveys and administrative government data.
* Most indicators relied on household survey data and used multidimensional indices to comprehensively measure poverty, aside from poverty line and poverty gap measures which relied exclusively on income and consumption.
* Indicators or indicator components were typically based on quantitative estimates of income or consumption, although an increasing number of measurements are instead classifying households according to deprivation of assets, food, or access to services and basic infrastructure.
* Overall, critics find that an emphasis on poverty line measurements has led to an incomplete understanding of poverty’s prevalence and trends over the last several decades (UN Special Rapporteur, 2020).
* No single indicator dominates on considerations of reliability, dimensions, depth or intensity, comparability, etc., but rather each measure involves tradeoffs.
* If the goal is to increase the utility of commonly used indicators, including those considering multiple dimensions of poverty, then investments focused on expanding the coverage, frequency, or scope of nationally representative household surveys is a necessary first step.
* Making cross-country comparisons using any poverty indicator runs the risk of using a common metric based on different data sources and collected in different years that may not fully reflect a household’s welfare. Indices which include multiple subcomponents may be more holistic, but even less reliable as the number of components requiring data increases.
1. Introduction

*We are determined to end poverty and hunger, in all their forms and dimensions, and to ensure that all human beings can fulfill their potential in dignity and equality in a healthy environment.*

 --Millennium Development Goals Preamble

“Poverty,” in the sense that it is used by international institutions to sort populations and quantify deprivation, arose during the economic transformations of the post-WWII era. Conceptually, as Andrews (2009) observes, poverty is rooted in “underdevelopment”, a term used when a country lacks sufficient infrastructure and service provision to ensure adequate quality of life. Underdevelopment *qua* obstacle to human flourishing can be traced to a speech delivered in 1949 by President Truman. At the time, eliminating underdevelopment in Africa focused on aid inflows and loans contingent on policy changes designed to facilitate the construction of infrastructure and economic integration into global trade under the rationale that improvement of a nation’s economy would lead to general improvement in the living conditions of its citizenry (Gray & Ariong, 2016). To paraphrase Kennedy (1963), this paradigm assumed that a rising tide would lift all boats. The institutional arm of the development push was the World Bank, established in 1944 at Bretton Woods. Its initial mandate of supporting post-war reconstruction and administering loan programs was expanded into low- and middle-income countries. Notably, although the development and poverty eradication have become conflated and although the Bank is now a significant contributor to contemporary thought and policy on poverty, ending poverty was not initially part of its mission. This change did not occur until the 1970s, when development and poverty became conceptually linked and thus alleviating poverty became central (Konkel, 2014).

This transition was not necessarily smooth. Konkel (2014) argues that the process of defining poverty has been “hotly contested” within the Bank despite its occurring without substantial remark by observers. Scrutinizing this process, Konkel concludes that the definition gradually evolved from a framing in “biological terms as an inability to meet the needs of the human body” before “evolving into an economic construct with a closer affinity with the Bank’s other overarching objective of economic growth,” which in turn facilitated the conceptual merger between poverty and underdevelopment (2014, p. 277). The World Bank’s major contribution along this axis was to “monetize” poverty by defining a $1-per-day threshold in 1990 in support of the Millennium Development Goals (ibid.).[[1]](#footnote-2) Variations on this initial indicator arguably remain the most used in international development, as explained in Section 3: Findings.

Despite the definitional controversy, defining poverty is crucial to the validity and reliability of poverty measures and evaluation[[2]](#footnote-3). A poverty definition helps with understanding who qualifies as impoverished (and therefore should be a target of assistance) and who is not, whether living standards are rising for the least privileged people, and whether interventions are producing tangible improvements. A poverty definition is also implicitly normative, as it includes a definition of an adequate standard of living, and relative, as it is defined against a sub-population who are not poor. Thus, individualizing poverty with a monetized consumption or income threshold was an improvement over the broad-brush Gross Domestic Product (GDP) per capita (which could mask inequality) or the Gini coefficient (which aggregates over a population). But it has long been widely argued that poverty has multiple dimensions, and that consumption or income thresholds alone, while important components and useful for some purposes, are not a particularly valid measure of poverty relative to some other indicators (See, for example, Saunders, 1980; Sen, 1981; Kabeer, 1996; Bradshaw and Finch, 2003; Whelan and Maitre, 2006; Alkire et. al, 2015).

An international poverty line (IPL), such as the initial $1-per-day, can be measured using household surveys of income or consumption and thus assigned at a greater degree of granularity. There is concern, however, that focusing on a threshold has not led to programs that meaningfully decreased global poverty. In 2020, the UN Special Rapporteur on extreme poverty and human rights directly criticized the standard international poverty line. Per the report, the $1.90 per day updated standard adopted in 2011 is below many countries’ internal poverty lines and is “explicitly designed to reflect a staggeringly low standard of living, well below any reasonable conception of a life with dignity” (p. 5). Moreover, the reliance on this threshold leads to erroneous estimates of the prevalence of and trends in global extreme poverty. The report notes that the $1.90 threshold leads to the conclusion that “the number of people in extreme poverty fell from 1.895 billion in 1990 to 736 million in 2015, and thus from about 36 to 10 percent of the world’s population,” whereas using a higher threshold of $5.50 per day suggests that global poverty is either stagnant or in more modest decline (p. 4; p. 8). Increasing the threshold further, either to $7.40 per day, as suggested by Edward (2015) as the amount necessary to achieve a normal human life expectancy, or to $10-15 per day, favored by Pritchett (2006), suggests that the number of people in poverty has dramatically increased since detailed recordkeeping began in 1981 and has only recently begun to decline due to significant improvements in China (see Figure 1 for results in sub-Saharan Africa). In contrast, the number of people below the $1.90 threshold in the Middle East and Africa “rose by some 140 million” between 1990 and 2010 (De Schutter, 2021b p. 9; Figure 1). In further proof that the “rising tide” of economic growth is leaving the most deprived behind, overall growth in income among the global poor has risen slower than global GDP (ibid., p. 16). The rapporteur estimates that, assuming historical growth trends and no impact due to climate change, it will take nearly 100 years to eliminate poverty under the World Bank criterion and 200 years using the revised $5/day threshold (ibid., p. 16).



Figure : Comparison of headcount (top) and ratio (bottom) poverty levels in sub-Saharan Africa using multiple thresholds. At the lower $1.90/day consumption threshold, poverty has declined marginally between 1990 and 2018, from 55% to 39% of the population, but overall headcount has increased by almost 50%, rising from 280 million to over 420 million. At the higher $5.50 and $7.40 thresholds chosen by researchers who argue that the values are more representative of the amount needed to live free from poverty, the ratios have only declined slightly while the number of people experiencing poverty has more than doubled. Data come from the World Bank’s PovCalNet.

As a result of questions around the validity of a single dimension of consumption or income as “poverty” and how interpretations vary with different thresholds and indicator construction choices, there have been multiple attempts at creating alternative poverty measures, all of which involve different tradeoffs. Efforts include measures that capture multiple dimensions of deprivation, led at the country level by the Mexican government and most notably at the global level with the Multi-dimensional Poverty Index (OPHI and UNDP) and the Multidimensional Poverty Measure (World Bank)[[3]](#footnote-4). Such indicators seek to be more holistic poverty standards that account for understanding of poverty as a multidimensional issue that cannot necessarily be solved by increases in income alone. There have also been efforts to respond to the shrinking percent of the world’s population living in the low-income countries that underlie the $1.90 day poverty line by adding absolute poverty lines of US$3.20/day for lower-middle-income countries and US$5.50/day for upper-middle-income countries. More recently, the World Bank has also developed the Societal Poverty Line, a poverty line that changes over time and is based on a country’s median level of income or consumption per capita[[4]](#footnote-5). And finally, there have been efforts focused on distinguishing the poor from the non-poor more cost-effectively, mostly using alternatives to large-scale household survey data. This paper reviews 36 poverty indicators encompassing both the long-used poverty line threshold measures as well as these emerging alternatives, including food security and other proxy measures for poverty. In the next section, we review our methods for discovering and selecting indicators. In Section 3, we discuss findings and compare how these different indicators define and measure poverty, examining the sources of data and their funding followed by assessing institutional uptake of various indicators. In Section 4, we consider the tradeoffs associated with using each indicator, assessing our sample along dimensions of interpretability, comparability, ease of calculation, dimensionality, depth or intensity, and organizational uptake Finally, in Section 5 we review the poverty indicators as a whole and provide recommendations for their continued improvement.

1. Methods

This analysis was conducted in several steps. First, we searched and screened poverty indicators to include in our sample. Next, we documented and evaluated the primary data sources associated with each of the included poverty indicators. Then, we investigated which indicators were used most by key organizations and governments. Finally, we used all these data to assess the tradeoffs of using one indicator over another using ranking criteria over several dimensions. Each step is explained in depth below.

Indicator Search and Screening

We included two types of poverty indicators: monetary measures (such as poverty line measures which “monetize” the conceptualization of poverty) and non-monetary measures, including food security indicators. To find existing indicators that measure poverty, we conducted searches on Google and Google Scholar using the following keywords: “Poverty Indicators,” “Wealth Indicators,” “Multidimensional Poverty Indicators,” “Poverty Using Novel Data Sources,” “Poverty and Social Media,” and “New Poverty Indicators.” Additionally, we relied on expert suggestions and prior EPAR work to complete our search. The initial results included 139 indicators (see Appendix C) which were then screened using the following inclusion criteria:

|  |  |
| --- | --- |
| **Monetary Measures** The indicator must have a monetary component, income component, or consumption component. However, it cannot be solely based upon GDP (or other national-level wealth measures) that aggregate estimates without the ability to assess and thereby track poverty within a distribution of income or consumption. Household level income or wealth is acceptable. | **Non-monetary Measures**The indicator must be related to or used for measuring poverty, such as measurements of food security or hunger, assets, and/or access to economic opportunities. Such indicators may lack a monetary component, income component, or consumption component.  |

Regardless of measure type, the indicator must be:

1. current (continues to be updated with empirical data or has the potential to be updated), and
2. a calculated measure that is not merely a proposal, as evidenced by discussion or adoption by organizations.

After applying these criteria, 36 poverty and food security indicators remained. Table 1 below summarizes key characteristics of the included indicators, including the year of introduction, the organization that developed the indicator, geographic coverage, the earliest year of poverty calculation, and how frequently the indicator is updated. Appendix B describes each of the 36 indicators in greater detail. Appendix C lists the indicators that did not meet the inclusion criteria.

*Table 1: Indicators meeting study inclusion criteria*

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Indicator | Year Introduced | Organization | Number of Countries Covered | Earliest Year | Publishing Frequency\* (new data may be less frequent) |
| Asset Index | 2003 | Authors: Sahn and Stifel (2000) and Filmer and Prichett (2001) | 10  | 1988 | ~Annually |
| Facebook Relative Wealth Index | 2021 | Meta Data for Good (Previously Facebook) | 93  | 2021 | ~Annually |
| IHME estimates of extreme poverty | 1990 | Institute for Health Metrics and Evaluation | 195  | 1980 | Once to date[[5]](#footnote-6) |
| Index of Multiple Deprivation | 2015 | English Ministry of Housing, Communities & Local Government | 4  | 2000 | 4 years |
| International Wealth Index | 2014 | Global Data Lab | 97  | 1992 | Annually |
| Lived Poverty Index | 1999 | Afrobarometer | 33  | 1999 | ~3 years |
| Machine-learning guided classification of satellite imagery for poverty-line level consumption (WB $1.90/capita/day) | 2016 | Sustainability and artificial intelligence lab -Stanford University | 5  | 2011 | Once to date[[6]](#footnote-7) |
| MPI: Global Multidimensional Poverty Index | 2010 | Oxford Poverty and Human Development Initiative; United Nations Development Programme | 109  | 2010 | Annually |
| MPI: Headcount of Multidimensional Poverty Index severe poverty | 2010 | Oxford Poverty and Human Development Initiative; United Nations Development Programme | 109  | 2010 | Annually |
| MPI: Headcount ratio of MPI poverty (%) [Component of MPI] | 2010 | Oxford Poverty and Human Development Initiative; United Nations Development Programme | 109  | 2010 | Annually |
| MPI: Intensity of Poverty (%) [Component of MPI] | 2010 | Oxford Poverty and Human Development Initiative; United Nations Development Programme | 109  | 2010 | Annually |
| MPM: Multidimensional Poverty Measure (%) | 2018 | World Bank | 150 | 2010 | Annually |
| Poverty gap (Mean monthly income below $1.90 international poverty line)  | 2011 | World Bank | 165  | 1981 | Annually |
| Poverty gap (Mean monthly income below $3.20 international poverty line)  | 2018 | World Bank | 165  | 1981 | Annually |
| Poverty gap (Mean monthly income below $5.50 international poverty line)  | 2018 | World Bank | 165  | 1981 | Annually |
| Poverty gap (Mean monthly income below the national poverty line)  | 2011 | World Bank | 156  | 1985 | Annually |
| Poverty gap, Watt's Poverty Index (ln-transformed ratio of income to poverty line) | 2011 | World Bank | 165  | 1981 | Annually |
| Poverty gap, weighted (Severity: non-linear squared) | 2011 | World Bank | 165  | 1981 | Annually |
| Poverty line: headcount ratio at $1.90 a day (% of population) | 2011 | World Bank | 165  | 1981 | Annually |
| Poverty line: Number of poor at IPL $1.90 a day (2011 PPP) | 2011 | World Bank | 165  | 1981 | Annually |
| Poverty line: Number of poor at IPLinternational poverty line $3.20 a day (2011 PPP) | 2018 | World Bank | 165  | 1981 | Annually |
| Poverty line: Number of poor at international poverty line $5.50 a day (2011 PPP) | 2018 | World Bank | 165  | 1981 | Annually |
| Poverty line: number of poor at national poverty line | 2011 | World Bank | 156  | 1985 | Annually |
| Societal Poverty Line headcount ratio | 2018 | World Bank | 165 | 1990 | Annually |
| Societal Poverty Line number of poor | 2018 | World Bank | 165 | 1990 | Annually |
| Poverty Probability Index | 2005 | Innovations for Poverty Action | 49  | 2005 |  |
| Revised Arab Multidimensional Poverty Index | 2015 | United Nations Economic and Social Commission for Western Asia | 10  | 2017 | Annually |
| Self-Sufficiency Standard | 2002 | University of Washington School of Social Work, Center for Women’s Welfare | 1 | 2001 | ~3 years |
| World Poverty Clock | 2017 | World Data Lab NGO | 188  | 2017 | Annually |
| Global Food Security Index | 2012 | The Economist Intelligence Unit | 113  | 2012 | Annually |
| Global Hunger Index  | 2006 | Concern Worldwide and Welthungerhilfe | 116  | 2000 | ~6 years |
| Number of severely food insecure people (million) | 2014 | FAO | 121  | 2014 | Annually |
| Number of undernourished people (million) (3-year average) | 2000 | FAO | 130  | 2000 | Annually |
| Prevalence of moderate or severe food insecurity in the total population (percent) | 2014 | FAO | 137  | 2014 | Annually |
| Prevalence of severe food insecurity in the total population (percent) | 2014 | FAO | 137  | 2014 | Annually |
| Prevalence of undernourishment (percent) | 2014 | FAO | 193 | 2000 | Annually |

Data Source Evaluation

All indicators are only as valid and reliable as the data that underlie them. Accordingly, after selecting the sample of poverty indicators, we identified the data sources that contributed to each indicator. We reviewed each indicator’s website or associated literature to determine data source information. For the primary data sources (the most frequently used) we collected the following information:

* Major funder(s)
* Type of data source (household survey vs administrative)
* Frequency of data collection
* Geographic coverage (number of countries)
* Subpopulation disaggregation (by gender, age, and other variables such as education or metropolitan status)
* Raw data availability and accessibility

We also rated each data source on whether it could be disaggregated by certain subpopulations. The criteria ranked data sources as high in disaggregation if they had three or more subpopulation possibilities: gender, age, and at least one more dimension; low if they did not enable any subpopulation disaggregation; or medium if they included gender or age.

Indicator Use by Organizations and Governments

After analyzing the data sources, we performed a rapid review of the literature to investigate which poverty indicators are used by large multilateral and non-governmental organizations. We used Web of Science and Google Scholar to search for grey and academic literature that explicitly mentioned organizations’ use of a specific poverty indicator. Our search strings included the name of each poverty indicator, with searches limited to the first five pages of results. After compiling a list of organizations using each indicator, we selected the 10 organizations using the most indicators and completed the search again adding those indicators and the 10 organizations to ensure that we accounted for all the poverty indicators each organization uses in their work. This group of 10 organizations, and the number of organizations using each indicator, formed the basis of assessing the traction of the indicators.

A second rapid review was performed to understand which poverty indicators are used by specific governments, including Bangladesh, India, Nigeria, South Africa, and Ethiopia, and bilateral aid organizations from the United States and the United Kingdom. These countries and organizations were chosen because of their relevance to the interests and goals of the Development Policy and Finance (DPAF) team. In this second review, we used the same search string methods described above - including the indicator and government or organization name in the search. For both rapid reviews, once literature was identified, we evaluated the documentation for information on the rationale for organizations and governments choosing each indicator.

3. Findings

How is Poverty Measured?

Income or Consumption

The more established indicators, such as the World Poverty Clock, poverty gap, and poverty line, rely on monetary welfare aggregates – i.e., consumption or income – collected through nationally representative household surveys[[7]](#footnote-8) or gathered from administrative data. For national level estimates of these indicators, about 60 percent of economies use consumption, with the rest choosing income (World Bank, 2020). This choice is driven by data availability and economic orientation.

Consumption measures are often more consistent than income measures but can require a wide range and number of questions to cover food and non-food categories (at times numbering in the hundreds) and are therefore time-consuming to gather. Income measures are often available from administrative data but are difficult to obtain or interpret when a large proportion of the population works seasonally or in the informal sector, or is self-employed, as is usually the case for low-income economies (World Bank, 2020). For example, most poverty estimates in Latin America and the Caribbean use income as a measure of welfare, since all countries in the region collect information on income while only a few extend the questionnaire to include consumption. Meanwhile, regions such as East Asia and Pacific use consumption because income data are not as routinely collected, and a high fraction of the population works in the informal sector.

Consumption is arguably more tied to human well-being than income because it represents the resources people use to maintain themselves rather than estimating the resources at their disposal. In volatile economies, income measures can be vary widely depending on when data are collected, whereas consumption measures are smoother. The higher variability in income measures means that nations who use consumption tend to report lower poverty rates; East Asia and the Pacific have tended to show lower poverty rates than Latin American and the Caribbean in recent years.

For consumption-based and income-based poverty measures, the national consumer price index (CPI) is used to deflate the welfare aggregate to the purchasing power parity (PPP) reference year - making comparison over time within a country possible. PPP adjustments in, for example, international poverty line calculations, are intended to better reflect local purchasing power than is possible with exchange rate conversions which are based only on internationally traded goods.

Global or National Standards

National poverty lines are based on the local cost of living, leading to thresholds that reflect income differences across countries and different changes over time. Yet some organizations want to track estimates of global poverty, which requires estimating each country’s poverty against a common (absolute) standard that remains fixed over time. For extreme poverty, the World Bank creates this standard using the national poverty lines from 15 of the world’s poorest countries; currently the international poverty line (IPL) of $1.90 per day, and thresholds of $3.20 and $5.50 that better reflect national poverty lines in lower-middle income and upper-middle income economies, respectively. “Conversely, relative poverty measures change depending on the income level in a country, that is, they are relative to a measure of welfare that reflects changes in living conditions and are useful for tracking how the definition of poverty evolves as countries get richer”. (World Bank, 2020 p.29). The Societal Poverty Line (SPL) is an example of a measure that uses the IPL and adjusts for a country’s median income, therefore combining elements of relative and absolute poverty (Jolliffe and Prydz 2017). While the threshold will vary by country, the methodology is common across countries, thus allowing for comparability across countries and over time.

Relative poverty measures are also sometimes used which consider the distribution of income within a country, for example, defining poverty as those living in the bottom deciles of the distribution, or below some country average. These types of measures can also be applied consistently across countries, though the results will be specific to a country’s income distribution.

Non-monetary or Proxy Measurement

Recognition that income or even consumption per se do not necessarily equate directly to living standards has resulted in new indicators often based on household survey data to measure relative deprivation. These indices typically track one or more of assets, economic opportunity, and food security (Figure 2), which can include subcategories such as access to education (educational attainment and/or educational enrollment), basic infrastructure (access to drinking water, sanitation, and electricity) or access to health care. These indicators, such as the global Multidimensional Poverty Index (MPI) and Multidimensional Poverty Measure (MPM), present a broader understanding of well-being by incorporating access to non-market goods (e.g., food security and safety from crime) and services to complement the monetary welfare aggregates. As with different uses for the national and international poverty line, there are increasingly National Multidimensional Poverty Indexes being calculated by countries that differ from the Global MPI (Alkire, 2018 and World Bank, 2020).



While these indicators address the realities not captured by income or consumption models — for example, someone with the resources to buy food may still lack access to it due to inadequate market access or storage — they have their own challenges with data collection and analysis. Many of these indices rely on household data collected through personal recall, increasing the possibility of error or accidental omission. In addition, this form of data collection is very sensitive to survey structure[[8]](#footnote-9) and can produce different results if the relevant sections of the survey are modified in subsequent years, reducing both geographical and temporal reliability. Indicators based on caloric thresholds may be unable to account for demographics and livelihoods, for example, setting thresholds too low to account for the physically demanding nature of many rural occupations (Hickel 2016). Additionally, most of these indicators are restricted to reporting access (e.g., electricity, child school enrollment, sanitation) and not on the quality of these services due to data constraints. Multiple dimensions require researchers to define and measure the number of components that constitute severe deprivation, which can increase cost, or rely on proxies available in existing household surveys.

Alternative Methods

To circumvent these obstacles, novel measures have attempted to leverage “big data” and machine learning algorithms, methods which, if effective, would reduce the expense required to collect data and increase the temporal granularity of estimates. Jean et al. (2016) were able to construct an algorithm that identified night light intensity from satellite imagery, which could then be related to poverty levels using additional geographic data. Compared to (in the authors’ words) the “gold standard” of LSMS-ISA estimates, the algorithm was successful in urban areas but was less reliable in rural areas and had the additional drawback of only providing poverty information at the enumeration area (ea) level. A second indicator, the Facebook Relative Wealth Index, estimates poverty using a similar method but uses machine learning to integrate geospatial and survey data, extending their approach to also include cell towers and number of internet-connected devices in an area. It also produces relatively coarse-scale predictions compared to household-level survey data; estimates are over 2.4 km2 grid cells.

Some approaches offer the ability to rapidly assess poverty in an area even where no survey data exist and can update at high frequencies as satellite data collection increases. However, because these methods are novel, they require significant computing infrastructure and expertise to successfully implement. In addition, machine learning models tend to frequently diverge from “gold standard” estimates when using threshold indicators (e.g., Jean et al. [2016] used a binary classification system to estimate whether the mean daily income in an ea was higher or lower than $1.90).

Lived Poverty Index

Proxy by Economic Opportunity

Proxy by Assets

Proxy by Food Security

IHME Global Hunger Index Number of undernourished Prevalence of undernourishment

Prevalence of moderate/severe food insecurity Number of severely food insecure

Prevalence of severe food insecurity

Asset Index

Facebook RWI

International Wealth Index

Machine-learning guided classification of satellite imagery

Index of Multiple Deprivation

Poverty Probability Index

Multidimensional poverty measure

MPI (including index, headcount, headcount ratio, intensity of poverty)

Revised Arab MPI

Global Food Security Index

Self-Sufficiency Standard

Global Food Security Index

Figure : Comparison of indicators that use non-monetary measures

Disaggregation Possibilities

Because many surveys collect data at the household level, 19 of the selected indicators do not offer granularity at the individual level. Of the remainder, disaggregation is possible by age and/or gender (Figure 3). Food insecurity estimates tend to provide estimates disaggregated by gender but not age, except for the Global Hunger Index. On the other hand, some of the multidimensional indicators – Index of Multiple Deprivation and the Self-Sufficiency Standard - reported results disaggregated by age but were not able to provide estimates by gender. Only two indicators, the Global and Revised Arab MPIs and the international poverty line contained sufficient detail to disaggregate by both age and gender.

Figure : Comparison of indicators that track subpopulations

Disaggregation by Gender

Disaggregation by Age

World Poverty Clock

Prevalence of moderate/severe food insecurity

Number of severely food insecure people

Prevalence of severe food insecurity

Global MPI (including index, headcount, headcount ratio, intensity of poverty)

Poverty line ($1.90/day)

Revised Arab MPI

Lived Poverty Index

Multidimensional poverty measure

Index of Multiple Deprivation

Self-Sufficiency Standard

Global Hunger Index

Breadth, Depth, Severity and Intensity

Most widely used indicators - such as the $1.90 poverty line – measure the total number or proportion of the population that falls below a threshold and are deliberately designed to be easily understood. A threshold count or rate covers breadth of poverty, but it is unable to account for the intensity, depth or severity of poverty, where intensity is described as the number of ways in which a household is deprived, as in the MPI, depth is the distance of a household from a threshold and severity overweights individuals furthest from the poverty threshold[[9]](#footnote-10). While the binary nature of a threshold (above or below) makes classification unambiguous, by its nature it must obscure degrees of deprivation and changes to household living conditions that do not cross the threshold. This lack of gradation makes tracking and targeting difficult. To improve interpretability, several complementary poverty measures either incorporate depth by including a “poverty gap” that represents the aggregate distance of households from the poverty line or intensity by measuring poverty along multiple forms of deprivation. For example, the Poverty Gap Index (PGI) adds up the extent to which individuals on average fall below the poverty line, which has the virtue that it does not imply a discontinuity at the poverty line. Non-linear transformations of the poverty gap, such as the squared poverty gap and the Watts Index, put more weight on individuals the farther they fall from the poverty line, thus capturing the severity of poverty. These indicators incorporate additional information at the expense of ease of calculation and interpretation.

Approaches to Constructing Index Indicators

The poverty indicators we reviewed use four general calculation approaches: simple average, weighted average, regression, and machine learning. Although used in similar applications, the geometric mean method (used in the HDI) was not used by any indicator. The strengths and weaknesses of these calculation methods and example indicators are listed in Table 2. Appendix B tables provide greater detail on the calculation methodologies as well as general measurement components.

The composite indices include multiple components of human development including financial status, education, housing status, physical wellbeing, or access to healthcare. In addition to constructing any single component, such as estimating household income or consumption in constant PPP dollars, these multidimensional indicators involve multiple data sources and decisions on how to normalize and aggregate the components. While the transformation of indicators with different units into consistent and often unitless values for simpler aggregation (normalization) has its advantages for comparability across various locations, it is also more difficult to interpret and to compare across time.

Table : Calculation methods for poverty indices and their strengths and weaknesses.

|  |  |  |  |
| --- | --- | --- | --- |
| Calculation Approach | Example Indicators | Strengths | Weaknesses |
| Simple Average | Poverty Gap, Global Hunger Index, Societal Poverty Line headcount ratio | Simplicity of calculation and transparency of outcome | May be overly restrictive for some applications; either single-unit (e.g., income) or unitless (such as mean score), and can obscure meaningful differences in sub-elements  |
| Weighted Average | Asset Index, MPI, MPM, Index of Multiple Deprivation, Lived Poverty Index | Allows for determinations of certainty or importance to be included in the indicator | Weighting is often subjective, and weighting decisions can influence outcomes |
| Regression | IHME extreme poverty estimate, International Wealth Index | Establishes relationships between measured variables and outcomes; allows for detection and quantification of individual effects and their interactions | Vulnerable to the influence of outliers and initial assumptions about the shape of the function; may require substantial expertise to produce and interpret |
| Machine Learning/Neural Networks | Facebook Relative Wealth Index, Machine-learning guided classification of satellite imagery | Can process “big data” that may be intractable for human analysts and find patterns that might otherwise be missed | “Black box” effect – most neural networks do not describe how they’re making decisions; model overfitting can occur if training data are not carefully selected or are incomplete  |

Data Sources and Financing

Most indicators are constructed with comprehensive household or administrative surveys that require ongoing funding, technical infrastructure, and political support. Many indicators rely on the same data sources: Living Standards Measurement Study Surveys (LSMS), National Household Income and Expenditure Surveys (HIES), Integrated Household Survey (his), Labor force surveys, Luxembourg Income Study Database, Priority Survey, National Household Budget Surveys, Core Welfare Indicator Questionnaire Survey, ICP PPP, Demographic Household Surveys (DHS), Multiple Indicator Cluster Survey (MICS), and the Food Insecurity Experience Scale survey module (FIES) are most used for construction of unique indicators (see Table 7 for the full list of data sources in order of most- to least-used). The indicators reviewed in this study rely primarily on just 26 sources of data. Although information on how much each funder contributes to the development and/or implementation of a data source is not readily available, we frequently observed joint efforts between multilateral and UN organizations to fund the development of a common tool for data collection (such as a standardized survey module) with data collection performed by national governments. Data collected using this approach appears to be highly preferred over administrative data, as all but one of the 12 most-used sources are household surveys.

National governments contribute to data efforts in 10 of the top 12 indicators. Other major funders include various UN agencies (14 data sources), multilateral development organizations such as the World Bank and the ILO (11 data sources), and national foreign aid agencies (5 data sources). In contrast, foundations and academic institutions comprise a very small proportion of funders. This may also be a potential explanation for the irregularity of data collection for many of the data sources: national budgets, conflicts, and time-limited aid flows contribute to the (in)feasibility of fielding surveys.

Because of the high cost of nationally representative household surveys, poverty measures have also been estimated using satellite imagery and machine learning to proxy for monetary welfare estimates (e.g., the Facebook Relative Wealth Index). These methods promise substantially reduced collection outlays because the data are already being gathered for other reasons and can be leveraged for poverty estimation without substantial modification. However, costs do remain in the sense that algorithmic or imagery-based classification methods require household survey or other data for ground-truthing and training algorithms. While advancement in these areas promises substantial improvements in temporal and spatial coverage, substantial development efforts will remain necessary in the immediate term.

Indicator Adoption by Governments and Multilateral Organizations

The organizational rapid review focused on the ten most-mentioned organizations, seven UN multilateral organizations, the World Bank, the Organization for Economic Cooperation and Development (OECD), and the Bill & Melinda Gates Foundation (BMGF). Table 3 also illustrates which indicators each of the 10 organizations use. Of this group, the World Bank and UNICEF use the greatest number of poverty and food insecurity indicators, 28 and 23 respectively, followed by the UNDP, the FAO, and the WFP. The indicators that were most used by these multilateral organizations include one monetary poverty indicator, the poverty line headcount ratio at $1.90 a day (percent of country population), and three food insecurity (non-monetary) indicators: (1) the number of severely food insecure people (million), (2) the prevalence of undernourishment (percent of country population), and (3) the number of undernourished people (million) (3-year average). Each of these four indicators is used by 9 of the top 10 organizations.

Table : Indicator use by multilateral organizations

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Indicator | World Bank | UNICEF | UNDP | WHO | IFAD | OECD | FAO | WFP | PAHO | BMGF | Total |
| Asset Index | Y | Y | Y |   | Y |   | Y | Y |   |   | 6 |
| Facebook Relative Wealth Index | Y |   |   |   |   |   |   |   |   |   | 1 |
| IHME estimates of extreme poverty |   |   |   |   |   |   |   |   |   | Y | 1 |
| Index of Multiple Deprivation | Y | Y | Y | Y |   | Y |   |   |   |   | 5 |
| International Wealth Index |   |   |   |   |   |   |   | Y |   | Y  | 2 |
| Lived Poverty Index |  |  |  |  |  |  |  |  |  |  | 0 |
| Machine-learning guided classification of satellite imagery for poverty-line level consumption (WB $1.90/capita/day) |  Y |  Y | Y |   |   |   |   | Y  |   |   | 4 |
| MPI: Global Multidimensional Poverty Index | Y | Y | Y | Y  | Y  | Y | Y | Y  |   |   | 8 |
| MPI: Headcount of severe poverty | Y | Y | Y |   |   | Y | Y | Y  |   |   | 6 |
| MPI: Headcount ratio of MPI poverty (%)  | Y | Y | Y |   |   | Y | Y | Y  |   |   | 6 |
| MPI: Intensity of Poverty (%) [Component of MPI] | Y | Y | Y |   | Y  | Y | Y |  |   |   | 6 |
| MPM: Multidimensional Poverty Measure  | Y | Y | Y |  |  | Y |  |  |  |  | 4 |
| Poverty gap below $1.90  | Y |  Y |   | Y |   | Y | Y | Y  |   |   | 6 |
| Poverty gap below $3.20  | Y |   |   | Y |   |   | Y  |   |   |   | 3 |
| Poverty gap below $5.50 | Y |   |   |   |   |   |   |   |   |   | 1 |
| Poverty gap below national poverty line  | Y | Y |   |   |   |   | Y  |   |   |   | 3 |
| Poverty gap, Watt's Poverty Index (ln-transformation) | Y | Y |   |   |   |   |   |   |   |   | 2 |
| Poverty gap, weighted (Severity: non-linear squared) | Y |   |   |   |   |   |   |   |   |   | 1 |
| Poverty line: headcount ratio at $1.90/day | Y |  Y | Y | Y | Y  |   | Y  | Y  | Y  | Y | 9 |
| Poverty line: headcount at $1.90/day | Y |  Y | Y | Y | Y  |  |   |   |   | Y | 6 |
| Poverty line: headcount at $3.20/day | Y |  Y | Y | Y | Y  |  |   |   |   | Y | 6 |
| Poverty line: headcount at $5.50/day | Y |  Y | Y |   | Y  |  |   |   |   |   | 4 |
| Poverty line: number of poor at national poverty line/ Not found: Option Poverty headcount ratio at national poverty lines (% of population) |  Y |  Y | Y | Y | Y  |   | Y  | Y  | Y  |  | 8 |
| Poverty Probability Index |   |   |   |   |   |   |   |   |   |   | 0 |
| Revised Arab Multidimensional Poverty Index |   | Y | Y |   |   |   | Y  | Y  |   |   | 4 |
| Self-Sufficiency Standard |   |   |   |   |   |   |   |   |   |   | 0 |
| Societal Poverty Line headcount ratio | Y |  |  |  |  |  |  |  |  |  | 1 |
| Societal Poverty Line number of poor | Y |  |  |  |  |  |  |  |  |  | 1 |
| World Poverty Clock |  |  Y | Y |   | Y  |   |  | Y  |   |   | 4 |
| Global Food Security Index |  Y |   |   |   |   |   | Y |   |   |   | 2 |
| Global Hunger Index  |   |   |   |   | Y  |   |    | Y  |   |   | 2 |
| Number of severely food insecure people (million) | Y | Y | Y | Y | Y | Y  | Y | Y | Y |   | 9 |
| Number of undernourished people (million) (3-year average) |  Y |  Y | Y | Y | Y | Y  | Y | Y | Y  |   | 9 |
| Prevalence of moderate or severe food insecurity in the total population (percent) | Y | Y |   | Y | Y |   | Y | Y | Y |   | 7 |
| Prevalence of severe food insecurity in the total population (percent) | Y | Y |   | Y | Y |   | Y | Y  | Y |   | 7 |
| Prevalence of undernourishment (percent) | Y | Y | Y | Y | Y | Y  | Y | Y | Y |   | 9 |

Table 4 displays indicator use by governments (Bangladesh, India, South Africa, Nigeria, and Ethiopia) and bilateral aid organizations (USAID and FCDO UK). The poverty headcount ratio at the national poverty line is the most utilized indicator by these entities, with six of the seven using it. The next most used indicators by the selected entities include the poverty line headcount ratio and the number of poor at the international poverty line of $1.90 a day.

Table : Indicator use by Governments (Bangladesh [BGD], India [IND], South Africa [ZAF], Nigeria [NGA], and Ethiopia [ETH]) and Bilateral Organizations in the United States and the United Kingdom.

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Indicator | BGD | IND | ZAF | NGA | ETH | USAID | FCDO UK |
| Asset Index |  |  |  |  |  |  |  |
| Facebook Relative Wealth Index |  |  |  | Y |  |  |  |
| IHME estimates of extreme poverty |  |  |  |  |  |  |  |
| Index of Multiple Deprivation |  | Y |  |  |  | Y |  |
| International Wealth Index |  | Y |  |  | Y | Y |  |
| Lived Poverty Index[[10]](#footnote-11) |  |  |  |  |  |  |  |
| Machine-learning guided classification of satellite imagery for poverty-line level consumption (WB $1.90/capita/day) |  |  |  | Y |  |  |  |
| MPI: Global Multidimensional Poverty Index |  | Y |  |  |  | Y |  |
| MPI: Headcount of severe poverty |  | Y |  |  |  |  |  |
| MPI: Headcount ratio of MPI poverty (%)  |  | Y |  | Y |  |  |  |
| MPI: Intensity of Poverty (%)  |  | Y |  |  |  |  |  |
| Multidimensional Poverty Measure |  |  | Y |  |  | Y | Y |
| Poverty gap below $1.90  | Y | Y |  | Y |  |  |  |
| Poverty gap below $3.20  |  |  |  |  |  |  |  |
| Poverty gap below $5.50 |  |  |  |  |  |  |  |
| Poverty gap below national poverty line  | Y |  |  | Y |  |  |  |
| Poverty gap, Watt's Poverty Index (ln-transformation) |  |  |  |  |  |  |  |
| Poverty gap, weighted (Severity: non-linear squared) | Y |  |  |  |  | Y |  |
| Poverty line: headcount ratio at $1.90/day | Y |  | Y | Y | Y | Y |  |
| Poverty line: headcount at $1.90/day |  |  |  |  | Y | Y | Y |
| Poverty line: headcount at $3.20/day |  | Y |  |  |  | Y | Y |
| Poverty line: headcount at $5.50/day |  |  |  |  |  |  |  |
| Poverty line: number of poor at national poverty line | Y | Y | Y | Y | Y | Y |  |
| Poverty Probability Index |  |  |  |  |  |  |  |
| Revised Arab Multidimensional Poverty Index |  |  |  |  |  |  |  |
| Self-Sufficiency Standard |  |  |  |  |  |  |  |
| Societal Poverty Line headcount ratio |  |  |  |  |  |  |  |
| Societal Poverty Line number of poor |  |  |  |  |  |  |  |
| World Poverty Clock |  | Y |  |  |  |  |  |
| Global Food Security Index |  |  |  |  |  |  |  |
| Global Hunger Index  |  |  |  |  | Y |  |  |
| Number of severely food insecure people (million) |  |  |  |  | Y | Y | Y |
| Number of undernourished people (million) (3-year average) |  |  |  |  |  |  |  |
| Prevalence of moderate or severe food insecurity in the total population (percent) |  |  |  |  |  | Y |  |
| Prevalence of severe food insecurity in the total population (percent) |  |  |  |  |  | Y |  |
| Prevalence of undernourishment (percent) |  |  |  |  |  | Y |  |

Poverty line indicators are used extensively by aid organizations and governments, perhaps because they are well established and relatively simple to use to monitor progress towards reducing poverty. For example, the headcount ratio at $1.90 a day is used by all but one of the organizations listed in Table 3 and by five of the seven entities listed in Table 4. Several organizations and governments describe using this indicator to monitor progress towards eradicating extreme poverty and meeting SDG 1. For example, Ethiopia and Bangladesh use this indicator to track progress on poverty eradication in their countries while using it to inform policy and program design and implementation (CSA & WFP 2019, MOF 2015). Organizations such as the UNDP use poverty lines as benchmarks for monitoring broader progress and evaluating poverty-related policies and programs (Moyer et al. 2019). The national poverty lines are used by almost all of the organizations and governments to measure the incidence of poverty and to track progress in poverty reduction. USAID, for example, uses the national poverty line because thresholds are set with reference to the typical living conditions prevailing within a country’s borders (USAID 2013). India and South Africa utilize the national poverty line to measure the performance within their countries regionally and locally towards meeting SDG 1 and eradicating poverty (NITI Aayog 2021, Dept of Stats, SA, 2021).

Organizations like the World Bank and USAID use the poverty gap indicators to reflect the depth of poverty[[11]](#footnote-12) (Foster et al. 2013, USAID 2016). Organizations use this indicator to more fully represent poverty levels of a specific country, enabling them to make more meaningful comparisons across countries (ODI 2016). The governments of India, Bangladesh, and Nigeria use the poverty gap (mean monthly income below $1.90 international poverty line) indicator to measure the depth of poverty in their respective countries (NITI Aayog 2021, MOF 2015, NBS Nigeria 2019).

Various components of the MPI and MPM are used by organizations like World Bank, UNDP, and UNICEF. For example, the UNDP uses the MPI to assess progress towards SDG 1 (OPHI & UNDP, 2020). Governments reportedly use the MPI indicators as a tool for self-improvement, bringing about reforms in policies and improving the last-mile implementation of government schemes (NITI Aayog 2021, Namibia Statistics Agency 2021). For example, the Indian Government computes a national MPI through the addition of new indicators, which allows for the freedom to choose dimensions and indicators based on priorities, local contexts, and data availability (NITI Aayog, 2021).

Some of the more novel indicators are used by organizations to augment household surveys and create more frequent estimates at a fraction of the cost. For example, UNICEF, UNDP, and the World Bank have started using machine learning-guided classification of satellite imagery to predict, rather than simply describe, wealth and poverty among low- and middle-income countries at a granular level as well as with nationwide coverage (Engstrom et al. 2017, Sekara 2018, Ledesma et al 2020). The Facebook Relative Wealth Index also uses unconventional methods to provide frequent micro-estimates of poverty that allow for geographic targeting that would otherwise not exist. For example, the World Bank has started utilizing this indicator to provide more up-to-date poverty estimates at a higher resolution (Blumenstock et al 2021). Nigeria’s government has been using the Facebook Relative Wealth Index to target pockets of poverty at a more granular scale and identify potential beneficiaries of its national COVID-19 cash transfer project (Chi 2022).

The Poverty Probability Index and Self-Sufficiency Standard are not used by any of the governmental or non-governmental organizations we reviewed. Poverty indicators such as the Self-Sufficiency Standard and the IHME estimates of extreme poverty are not extensively used by the multilateral organizations. Indicators such as (1) Asset Index, (2) IHME estimates of extreme poverty, (3) Poverty gap (Mean monthly income below $3.20 and $ 5.50 international poverty line), (4) Watt's Poverty Index, (5) Number of poor at international poverty line $5.50 a day (2011 PPP), (6) Poverty Probability Index, (7) Revised Arab Multidimensional Poverty Index, (8) Societal Poverty Line, (9) Self-Sufficiency Standard, (10) Global Food Security Index, and (11) Number of undernourished people (3-year average) have not been used by any of the 7 governmental or bilateral aid organizations that we investigated.

Most of the food security indicators, except for the Global Food Security Index (GFSI) and Global Hunger Index (GHI), were developed by the FAO and are used to measure progress against SDG 2. These indicators measure and track hunger to spotlight areas that have the greatest need to eliminate hunger. Organizations like PAHO use food security indicators to contribute to the policy dialogue for post-pandemic recovery, which is fundamental to closing gaps in inequality and meeting the goals of the 2030 Agenda for Sustainable Development (PAHO et al 2021). USAID uses prevalence of food insecurity indicators to understand the trends in prevalence rates of food security, and the impact of Covid-19 on food insecurity (USAID 2022). In addition, USAID uses the prevalence of undernourishment to measure global average life expectancy and links to health and nutrition (USAID 2021). The Ethiopian Government uses the GHI to understand the factors that lead to food insecurity and households’ vulnerability (CSA & WFP 2019).

4. Tradeoffs

Criteria and Rankings

Poverty measurement in the literature is discussed in terms of approaches, for e.g., monetary or capability, functions, for e.g. identifying who is poor and aggregating to understand the level of poverty, and properties, for e.g., scale invariance, focus, monotonicity and transfer axioms)[[12]](#footnote-13). Below we rank indicators on some subjective assessments of their utility for users - simplicity of calculation, interpretation, comparability over time and geography, dimensionality, depth or intensity, as well as current levels of organizational uptake and use:

* *Calculation simplicity* was intended to capture relative degrees of replicability and statistical interpretation. High scores were given to indicators constructed using simple summations or averages, medium scores were assigned to those based on multi-step processes but that only relied on simple methods, and low scores were given to indicators calculated with weighted averages, regression, machine learning, or multi-step processes based on more complex methods.
* *Interpretation simplicity* was defined as the degree to which a given indicator directly reports the population proportion of people in poverty (or experiencing food insecurity, depending on the indicator). Accordingly, indicators that produce poverty rates (e.g., the number of individuals falling below the poverty line as a proportion of the population) were rated highly interpretable; those that generate counts or other non-rate measures were given medium scores; indicators that are indices or multidimensional were rated low. Rates were considered easier to interpret than headcounts, because they allow for an easier comparison of the level of poverty among a population, that is, interpreting whether an absolute number is high or low for a particular country given its size. We recognize, however, that headcounts may be considered more interpretable in some cases, for example when absolute numbers drive considerations of where and how to distribute funding.
* *Comparability over time and geography:* Indicators that can be compared over both time and geography were rated as highly comparable, those only comparable across one were given a medium rating, and those not comparable across time or geography were assigned a low rating. As an example, headcounts that use an international threshold were ranked as “high” because they are (imperfectly) comparable across both time and geography, whereas headcounts using the national poverty line were ranked as “medium” because they are not comparable across countries.
* *More than one deprivation* indicates whether each poverty measure incorporates multiple dimensions of deprivation (i.e. consumption, education, housing) or not. This rating was coded as a “yes” if the indicator has multiple dimensions, and “no” if the indicator is only based on a single dimension.
* *Reflects depth or intensity:* A primary goal of poverty indicators is to distinguish poor from non-poor individuals. Some indicators go beyond that categorical classification to reflect either the d*epth of poverty -* the degree to which an indicator captures the distance the individual or household falls below a threshold, or intensity of deprivation – the number of deprivations experienced by the same individual or household. We assign a “no” for purely categorical indicators (poor/non-poor) and a “yes” if the indicator reflects gradations of poverty via either depth or intensity.
* *Organizational uptake:* Indicators being used by seven or more major organizations were considered to have high organizational uptake; those used by four to six were given a medium uptake rating, and indicators used by zero to three major organization were designated as having low uptake.

The complete rankings are presented in Table 5.

Table : Relative and Subjective Assessment of Indicators

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Indicator  | Calculation Simplicity | Interpretation Simplicity | Comparability over time and geography | More than one deprivation | Reflects depth orintensity | Current organizational uptake |
| Asset Index | Low | Low | High | No | Yes | Medium |
| Facebook Relative Wealth Index | Low | Low | Low | No | Yes | Low |
| IHME estimates of extreme poverty | Low | High | High | Yes | No | Low |
| Index of Multiple Deprivation | Low | Medium | Low | Yes | Yes | Medium |
| International Wealth Index | Low | Low | High | No | Low | Low |
| Lived Poverty Index | Low | Medium | High | Yes | Yes | Low |
| Machine-learning guided classification of satellite imagery | Low | Low | Medium | No | Yes | Medium |
| MPI: Global Multidimensional Poverty Index | Low | Low | High | Yes | Yes | High |
| MPI: Headcount of Multidimensional Poverty Index Severe poverty | High | Medium | High | Yes | No | Medium |
| MPI: Headcount ratio of MPI poverty (%) [Component of MPI] | High | High | High | Yes | No | Medium |
| MPI: Intensity of Poverty (%) [Component of MPI] | Low | Medium | High | Yes | Yes | Medium |
| Multidimensional Poverty Measure | High | High | High | Yes | No | Low |
| Poverty gap (Mean monthly income below $1.90 international poverty line)  | High | Medium | High | No | Yes | Medium |
| Poverty gap (Mean monthly income below $3.20 international poverty line)  | High | Medium | High | No | Yes | Low |
| Poverty gap (Mean monthly income below $5.50 international poverty line)  | High | Medium | High | No | Yes | Low |
| Poverty gap (Mean monthly income below the national poverty line)  | High | Medium | Medium | No | Yes | Low |
| Poverty gap, Watt's Poverty Index (ln-transformed ratio of income to poverty line) | Low | Low | High | No | Yes | Low |
| Poverty gap, weighted (Severity: non-linear squared) | Low | Low | High | No | Yes | Low |
| Poverty line: headcount ratio at $1.90 a day (% of population) | High | High | High | No | No | High |
| Poverty line: Number of poor at international poverty line $1.90 a day (2011 PPP) | High | Medium | High | No | No | Medium |
| Poverty line: Number of poor at international poverty line $3.20 a day (2011 PPP) | High | Medium | High | No | No | High |
| Poverty line: Number of poor at international poverty line $5.50 a day (2011 PPP) | High | Medium | High | No | No | Medium |
| Poverty line: Poverty headcount ratio at national poverty lines (% of population) | High | High | Medium | No | No | High |
| Poverty Probability Index | Medium | Medium | Low | Yes | No | Low |
| Revised Arab Multidimensional Poverty Index | Low | Low | High | Yes | Yes | Medium |
| Self-Sufficiency Standard | High | Low | Medium | Yes | Yes | Low |
| Societal Poverty Line headcount ratio | High | High | High | No | No | Low |
| Societal Poverty Line number of poor | High | Medium | High | No | No | Low |
| World Poverty Clock | Low | Low | High | No | No | Medium |
| Global Food Security Index | Low | Low | High | Yes | No | Low |
| Global Hunger Index  | High | Low | High | Yes | Yes | Low |
| Number of undernourished people (million) (3-year avg) | Low | Medium | High | No | No | High |
| Prevalence of undernourishment (%) | Low | High | High | No | No | High |
| Prevalence of moderate or severe food insecurity in the total population (%) | Low | High | High | No | No | High |
| Number of severely food insecure people (million) | Low | Medium | High | No | No | High |
| Prevalence of severe food insecurity in the total population (%) | Low | High | High | No | No | High |

Broadly speaking, indicators ranked highest for organizational uptake tend to have high levels of comparability across time (and seemingly across geography, bearing in mind data and context differences). Some of the highest-use indicators are based on simple calculations (i.e., poverty lines) while others utilize more complex calculation methods (i.e., Global MPI, FAO food security indicators), suggesting that simplicity of calculation is not necessarily required for widespread uptake. In contrast, simplicity of interpretation as a monetary poverty measure tended to be strongly associated with organizational uptake and are some of the oldest indicators. Some emerging indicators based on complex methods with lower current utilization (e.g., Facebook Relative Wealth Index, machine-learning guided classification of satellite imagery) may gain organizational traction in the future.

Many high-use indicators scored poorly for use of more than one dimension of deprivation, as they capture only a single poverty dimension or count of people in poverty (i.e., poverty lines, FAO food security indicators). The MPI is the highest-use multidimensional indicator, though several others (ie. IMD, LPI, MPM, PPI) have potential to improve uptake given high rankings in other tradeoffs. Several indicators including the Lived Poverty Index, MPI, Revised Arab MPI, and Self-Sufficiency Standard received ‘yes’ scores for depth/intensity, indicating that these indicators can describe both gradations and magnitude of poverty.

The World Bank poverty line headcount ratio at $1.90/day scored highly in most categories, though it earned a low score on both dimensionality and depth/intensity. As noted this indicator does not account for varying national contexts (though the SPL, based off the international poverty line, does), indicate the depth of impoverishment, represent the full number of people experiencing hardship and is unidimensional relying only on consumption and income measures to assess poverty. The historical longevity of this indicator likely contributes to its high level of organizational utilization. It is also based on a simple average, so it is easy to calculate. We also acknowledge that others would disagree with rating ratios above counts: as measures of progress or the effectiveness of interventions, proportional measures are vulnerable to distortion by dilutive effects of population growth and obscure how many people remain impoverished, which, as Hickel (2016) observes, is what should be the primary focus of poverty reduction initiatives.

The Multidimensional Poverty Index headcount ratio (MPI-H) also scored well in the tradeoff categories. As this component of the Global MPI is a rate of people considered multidimensionally poor, it is ranked highly for simplicity of interpretation. It is calculated using a linear aggregation, which is considered a simple methodology. It also scores highly for comparability across time and geography and can be decomposed into its underlying indicators (dimensions of poverty) within each location. Like the World Bank $1.90 poverty line, the MPI headcount ratio doesn’t represent depth or intensity of poverty, though the Global MPI does. Another multidimensional indicator, the Multidimensional Poverty Measure (MPM), scored highly in most categories except for organizational uptake which could be explained by its recent appearance.

Among the food insecurity indicators, the prevalence of undernourishment, moderate/severe, and severe food insecurity scored highest, largely because they report population proportions experiencing food insecurity. Each of these have high organizational uptake and are comparable across time and (again noting data differences) geography. Their overall rankings are tempered by the complexity of calculations required to generate them. The food security indicators are used by organizations to measure progress towards SDG 2 and more recently to understand a spike in hunger due to the pandemic. Of the seven food security indicators, the FAO’s five indicators have the most traction among governmental and non-governmental organizations due to their ease of interpretation, comparability, and high frequency of reporting. Use of the Global Food Security Index and Global Hunger Index is limited among organizations and governments.

Comparing High-Use Indicators: Some country case studies

According to our analysis of organizational indicator uptake, the MPI, World Bank poverty lines, and FAO food security indicators are the most utilized indicators of poverty or food security, respectively. Among the poverty lines, the $1.90/day, $3.20/day, and national poverty lines are the most common thresholds for organizational use. To assess consistency between these highly utilized indicators, we examined the most recent estimates for each indicator in Nigeria and Ethiopia.

In Nigeria, the 2018 MPI was 0.254, which is composed of a 46% multidimensional poverty rate and an average deprivation rate of 55% of the MPI dimensions. The MPI also identified 27% of the population as being in severe poverty. The MPI poverty headcount ratio is roughly consistent with the 2018 World Bank poverty rate of 39% at or below $1.90/day and the 40% rate below the national poverty line. However, the MPI headcount ratio is far below the 71% of Nigerians estimated to be at or below the $3.20/day poverty line (143 million people).

The 2019 FAO food security indicators report a lower proportion (15%; 29.4 million people) of Nigerians experiencing undernourishment than the MPI headcount ratio or the World Bank $1.90/day poverty rate. This is a reasonable discrepancy given that the MPI incorporates several other poverty dimensions beyond nutrition and the $1.90/day poverty line accounts for consumption other than food spending. The FAO indicators also report 21% of Nigerians (43 million people) living in a household with at least one severely food insecure person, and 58% (116 million people) experiencing moderate or severe food insecurity.[[13]](#footnote-14) While not directly comparable, the latter broadened measure offers a similar sense of intensity of food insecurity as using multiple poverty lines.

For Ethiopia, the 2019 MPI was 0.367, which is composed of a 69% multidimensional poverty rate and an average deprivation rate of 53% of the MPI dimensions. The MPI identified 42% of the population as being in severe poverty. In this case, The MPI poverty headcount ratio is equal to the 2015 poverty headcount ratio of 69% using the $3.20/day poverty line (70 million people). However, the MPI poverty headcount ratio is higher than the 24% and 31% rates using the national poverty line and the $1.90 poverty line respectively.

In a pattern similar to Nigeria’s, the 2019 FAO food security indicator in Ethiopia reports a much smaller proportion (16%; 18.2 million) of people undernourished than the MPI headcount ratio or the $1.90/day poverty rates. Also, the FAO indicators report 16% of Ethiopians (18.4 million people) living in a household with at least one severely insecure person, and 56% (63.2 million people) living under moderate or severe food insecurity. Again, these results show that despite the lower rates of prevalence of severe food insecurity compared to the MPI or $1.90/day poverty lines, a large proportion of the people still experience moderate food insecurity.

Table : Comparison of poverty indicators between Ethiopia and Nigeria.

|  |  |  |
| --- | --- | --- |
| Indicator | Nigeria | Ethiopia |
| MPI | 0.254 | 0.367 |
| MPI Headcount Ratio | 46% | 69% |
| MPI Intensity of Poverty | 55% | 53% |
| MPI Severely Poor | 27% | 42% |
| $1.90 International Poverty Line (% below) | 39% | 31% |
| $3.20 International Poverty Line (% below) | 71% | 69% |
| $5.50 international Poverty Line (% below) | 92% | 90% |
| National Poverty Line | 40% | 24% |
| Prevalence of Undernourishment | 15% | 16% |
| Number of People Undernourished (millions) | 29.4 | 18.2 |
| Prevalence of Severe Food Insecurity | 21% | 16% |
| Number of Severely Insecure People (millions) | 43 | 18.4 |
| Prevalence of Moderate or Severe Food Insecurity | 58% | 56% |
| Number of Moderate or Severe Insecure People (millions) | 116 | 63.2 |

For the purpose of tracking a country’s progress in moving people above a reasonable consumption or monetary threshold over time, a poverty line is useful. But for targeting investments the spatial distribution of deprivation within countries is revealing as access to basic infrastructure and exposure to conflict varies, in addition to the different dimensions by country as can be seen in the World Bank’s breakdown of multidimensional poverty (World Bank, 2020, p. 106):



Data Source Tradeoffs

The data source tradeoff categories used in Table 7 provide perspective on relative strengths and weaknesses of the data sources used for indicator construction. We have ordered this table by descending frequency of data source use by the indicators included in this study. All but one of the data sources used by more than one indicator rely on household data; by contrast, half of the data sources used by only one indicator are administrative data.

This reliance on household data is likely to continue, as even novel sources are often trained with survey estimates, and compared to some novel measures, survey data is relatively accessible and easy to work with. They are less subject to political manipulation and outdated national accounting (Jervon,2015) and often allow for information disaggregated by household subpopulation traits such as gender and age. Poverty indicators, however, generally assign all individuals within a household to a common poverty status, implicitly assuming all members of a given household experience the same level of income or consumption, ignoring potential unequal intra-household distributions. Household surveys are subject to respondent bias, both in response to questions about other household members (e.g., time use, decision-making) and their own recall (e.g., dietary consumption) (Anderson, Reynolds and Gugerty 2017; Wollburg, Tiberti and Zezza, 2021). And even the definition of household is geographically variable and can differentially include multiple generations and extended family, or polygamous relationships.

Household survey data collecting, cleaning, harmonization, and analysis also takes time, creating a gap between the time period the data describes and when it may inform the policymaking process. The experience of poverty may look different by the time policies are enacted to combat it. For example, a household survey may be too slow to be helpful after a shock and may be too challenging to collect in a post-disaster situation. High frequency phone surveys are being used by the World Bank to address this urgency with COVID.

Frequency of data collection is seemingly not correlated with utilization in indicator calculation; large surveys like the Demographic Health Survey (DHS) and Multiple Indicator Cluster Survey (MICS) are highly utilized though they are only conducted every three to five years, and multiple indicators make use of census data which are collected every five to ten years, depending on the country. The most frequently updated data sources are the Food Insecurity Experience Scale survey module (FIES), labor force surveys, and country CPI, which are collected at least annually.

Geographic coverage also seems to be inconsistently correlated with usage in indicator calculation. Among the most-used data sources for generating indicators, none have information for every country; several data sources used to generate the greatest number of unique indicators have data for fewer than 100 countries (LSMS, Luxembourg Income Study Database, Priority Survey, DHS). However, these surveys are still valuable due to their detailed household-level information and the high-quality data they provide particularly in low-income locations (most relevant for LSMS). Several lesser-used data sources are collected in all countries such as the ICP PPP which is used for calculating World Bank poverty indicators and the Country CPI and ITU Questionnaire which are utilized in the Global Food Security Index.

It is important to note that these ratings were based on the publicly accessible data for each data source; since many of these sources are collected at the individual level or associate household observations with granular subpopulation details for household members, it is likely that more detailed information may be available (microdata) for some sources. Based on the information we were able to collect about each data source, the most utilized data sources tend to be more disaggregated. Public data accessibility seems to be less correlated with data source usage. Together, these observations suggest that data sources are most useful for indicator construction if they present aggregated microdata by demographic subpopulations and that public online accessibility is a less important feature.

Table : Assessment of data sources for included indicators

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Data Source | Household or Admin | Frequency of Collection | Geographic Coverage (# countries) | Subpopulation disaggregation[[14]](#footnote-15) | Publicly Accessible? | # of unique indicators using source | # of indicator-producing orgs using source[[15]](#footnote-16) |
| Living Standards Measurement Study Survey | Household | Variable | 39 | High | Yes | 18 | 5 |
| National Household Income and Expenditure Surveys (HIES) | Household | 5 Years; Variable | 43 | Medium | Yes | 16 | 3 |
| Integrated Household Survey | Household | Variable | Unknown | High | Yes | 15 | 2 |
| Labour force surveys | Household | <Annual | 120 | High | No | 15 | 2 |
| Luxembourg Income Study Database | Household | 3-5 Years | 50 | High | No | 15 | 2 |
| Priority Survey | Household | Variable | 9 | Medium | Yes | 15 | 2 |
| National Household Budget Surveys | Household | 5 Years; Variable | 60 | High | No | 15 | 2 |
| Core Welfare Indicator Questionnaire Survey (2010-2014) | Household | Annual; Variable | Unknown | Medium | Yes (varies) | 14 | 1 |
| ICP PPP | Admin | Annual | 200 | Low | No | 14 | 1 |
| Demographic Health Survey | Household | 5 Years | 92 | High | Yes | 11 | 7 |
| Multiple Indicator Cluster Survey | Household | 5 Years; Variable | 118 | High | Yes | 7 | 4 |
| Food Insecurity Experience Scale survey module | Household | <Annual; Annual | 150 | Medium | No | 4 | 1 |
| Census | Household | 5-10 Years | Unknown | High | Yes (varies) | 3 | 3 |
| Food Balance Sheets | Household & Admin | Annual | 179 | Low | Yes | 3 | 2  |
| Afrobarometer | Household | 2-3 Years | 38 | Medium | Yes | 2 | 2 |
| Pan Arab Project for Family Health (PAPFAM) – Family Health Survey | Household | 5 Years | 10 | Medium | Yes | 2 | 2 |
| AmericasBarometer | Household | 2 Years | 34 | High | Yes | 1 | 1 |
| Annual Questionnaire on Government Expenditure on Agriculture and Related Categories | Admin | Annual | 190 | Low | No | 1 | 1 |
| Country CPI | Admin | <Annual; Annual | 200 | Low | No | 1 | 1 |
| ITU Questionnaire | Household | Annual | 200 | Low | No | 1 | 1 |
| National Accounts data | Admin | 5 Years | 200 | Low | No | 1 | 1 |
| National Child Labor Surveys | Household | 4 Years | 16 | High | Yes | 1 | 1 |
| Poverty Probability Index Survey | Household | Variable | 34 | Unknown | Yes | 1 | 1 |
| Questionnaire on Food Losses from Production to the Retail Stages | Admin | Annual | Unknown | Low | No | 1 | 1 |
| Water and Agriculture Questionnaire | Admin | Annual | 107 | Low | No | 1 | 1 |
| World Health Surveys | Household | Single collection | 70 | High | Yes | 1 | 1 |

 5. Discussion

The most appropriate indicator for assessing poverty or food security depends on the trade-offs the user is most willing to accept. For assessing poverty levels across locations and over time, indicators with high spatiotemporal comparability would be most helpful, such as the Lived Poverty Index, Global MPI, and SPL.. For determining poverty hotspots within countries or tracking poverty trends with frequent, granular updates, emerging indicators such as the Facebook Relative Wealth Index and poverty measurements based on machine-learning guided satellite imagery may emerge most useful. For measuring poverty in policy environments that tend toward well-established poverty measures, the Global MPI, MPM, poverty lines ($1.90/day headcount ratio, $3.20/day number of poor, national poverty line headcount ratio) and FAO food security indicators are most likely familiar to other stakeholders. Finally, if spatiotemporally comparable poverty rates are more useful than counts or intensity of poverty, the IHME estimates of extreme poverty, MPI headcount ratio, $1.90/day headcount ratio, SPL and FAO food security prevalence measures could be useful supplementary indicators.

Improving and evolving poverty indicators fundamentally involves better data. Our review suggests that funding for poverty measurement could be most globally beneficial if it were (a) used to fund existing and new data sources instead of used to create new measures that rely on existing data (e.g., the World Poverty Clock), or (b) used to fund more frequent or extensive data collection for the more complex measures (such as the Multidimensional Poverty Index and Multidimensional Poverty Measure) so that samples are more representative, more frequent, have better country coverage, and are more reliable. The number of non-governmental organizations (i.e., foundations, nonprofits, academic institutions) funding data sources and data collection are limited, so there is a substantial opportunity for increased involvement.

Funding is only one aspect of the challenge; capacity-building is another important aspect. Getting governments and national statistical offices to adopt new data collection tools may be challenging due to the cost of technical training or institutional authority.

This review found that, while a variety of indicators exist, only a few well-established indicators are in wide use. Simple income/consumption measures like the international poverty line tend to dominate, though while these metrics are simple to consume, they are complex to produce well. The MPI stands out among the newer multidimensional indices for acquiring interest in a relatively short time. Multidimensional measures of deprivation may be more complicated to interpret, but they benefit from having subcomponents that can be more unambiguous and concrete indicators of relative deprivation. A household living on $1.90/day but with access to free or low-cost public health and schools is in a different situation than a household at the same income level but without access. Digital and physical infrastructure, gender norms, and even the competition policy within a country - the degree to which markets are competitive or prices are high due to market power – can affect opportunities to escape poverty. It is not clear these tradeoffs are avoidable, and that the best that may be done is to provide a small suite of measures that provide as comprehensive a picture of poverty as possible, as is done in the World Bank’s Shared Prosperity reporting of conventional poverty lines, societal poverty lines (introducing a relative aspect), and a multidimensional poverty measure.

Though elusive in a single measure, our review suggests that an effective poverty indicator is (a) directly related to physical living conditions and adequately distinguishes between the requirements for survival and human flourishing while emphasizing the latter (b) provides or can be used to provide insight into how many people fall into each category, and (c) can be produced in a timely and consistent fashion. Indicators that meet these criteria are likely to be more generally difficult to interpret and compare than a consistent international poverty line and require more data collection but provide a commensurately more informative description of poverty.

References

Alkire, S., Roche, J. M., Ballon, P., Foster, J., Santos, M. E., & Seth, S. (2015). *Multidimensional poverty measurement and analysis*. Oxford University Press, USA.

Alston, P. (2020) The Parlous State of Poverty Eradication: Report of the Special Rapporteur on Extreme Poverty and Human Rights <undocs.org/en/A/HRC/44/40>

Anderson CL, Reynolds TW, Gugerty MK. (2017) Husband and Wife Perspectives on Farm Household Decision-making Authority and Evidence on Intra-household Accord in Rural Tanzania. World Dev. 90:169-183. doi: 10.1016/j.worlddev.2016.09.005. PMID: 28163352; PMCID: PMC5142737.

Andrews, N. (2009). Foreign Aid and Development in Africa: What the Literature Says and what the Reality Is. *Journal of African Studies and Development* 1:1, 8-15.

Biscaye, P., Harris, K. P., Reynolds, T, & Anderson, C.L. (2015). Relative Effectiveness of Bilateral and Multilateral Aid on Development and Social Outcomes. *EPAR Brief No. 294*. Evans School of Public Policy & Governance, University of Washington. Retrieved <18 March 2022> from https://epar.evans.uw.edu/policy-impact/epar/research/relative-effectiveness-bilateral-and-multilateral-aid

Blumenstock, J., Lain, J., Smythe, I., & Vishwanath, T. (2021). Using big data and machine learning to locate the poor in Nigeria. The World Bank. <https://blogs.worldbank.org/opendata/using-big-data-and-machine-learning-locate-poor-nigeria>.

Bradshaw, J., & Finch, N. (2003). Overlaps in dimensions of poverty. *Journal of social policy*, *32*(4), 513-525.

Central Statistical Agency of Ethiopia (CSA) and the World Food Program Ethiopia Office (WFP). (2019). Comprehensive Food Security and Vulnerability Analysis (CFSVA). https://reliefweb.int/sites/reliefweb.int/files/resources/wfp\_ethiopia\_cfsva\_report\_june\_2019.pdf

Chi, G., Fang, H., Chatterjee, S., & Blumenstock, J. E. (2022). Microestimates of wealth for all low-and middle-income countries. Proceedings of the National Academy of Sciences, 119(3). https://research.facebook.com/blog/2022/1/microestimates-of-wealth-for-all-low-and-middle-income-countries/

Chris Hoy (2016). ODI Report: Projecting national poverty to 2030. (10355.pdf (odi.org))

Dept of Stats, South Africa (2021). National Poverty Lines (2021). P031012021.pdf (statssa.gov.za)

De Schutter, O. (2021a). A Human Rights Based Approach to Measuring Poverty, in *Research Handbook on Human Rights and Poverty*, Davis, M.F. & Kjaerum, M. (Eds.) Edward Elgar Publ., pp 2-20.

De Schutter, O. (2021b). The Persistence of Poverty: How Real Equality Can Break the Vicious Cycles: Report of the Special Rapporteur on Extreme Poverty and Human Rights. <undocs.org/en/A/76/177>

Edward, P. (2006) The Ethical Poverty Line: A Moral Quantification of Absolute Poverty. Third World Quarterly 27:2, 377-393.

Elafly, A., Weber, O., & Geobey, S. (2020) The Sustainable Development Goals (SDGs): A Rising Tide Lifts All Boats? Global Reporting Implications in a Post SDGs World. Journal of Applied Accounting Research 22:3, 557-575.

Engstrom, R., Hersh, J. S., & Newhouse, D. L. (2017). Poverty from space: using high-resolution satellite imagery for estimating economic well-being. World Bank Policy Research Working Paper, (8284).

Freije-Rodriguez, S. & Woolcock, M. (2020). Reversals of Fortune: Poverty and Shared Prosperity 2020. World Bank Group. <<https://openknowledge.worldbank.org/bitstream/handle/10986/34496/9781464816024.pdf>>

Foster, James, Suman Seth, Michael Lokshin, and Zurab Sajaia. 2013. A Unified Approach to Measuring Poverty and Inequality: Theory and Practice. Washington, DC: World Bank. doi: 10.1596/978-0-8213-8461-9. World Bank Document

Gray, M. & Ariong, S.B. (2017). Discourses Shaping Development, Foreign Aid, and Poverty Reduction Policies in Africa: Implications for Social Work, in *The Handbook of Social Work and Social Development in Africa.* Gray, M. (Ed.) Routledge, pp. 1-34.

Hickel, J. (2016) The True Extent of Global Poverty and Hunger: Questioning the Good News Narrative of the Millennium Development Goals. *Third World Quarterly* 37:5, 749-767.

Kabeer, N. (1996). Agency, well‐being & inequality: Reflections on the gender dimensions of poverty. *IDS bulletin*, *27*(1), 11-21.

Kennedy, J.F. (1963) “Remarks in Heber Springs, Arkansas at the Dedication of Greers Ferry Dam” <https://www.jfklibrary.org/asset-viewer/archives/JFKWHA/1963/JFKWHA-228-003/JFKWHA-228-003>

Konkel, R. (2014). The Monetization of Global Poverty: The Concept of Poverty in World Bank History, 1944-90. *Journal of Global History* 9:2, 276-300.

Langford, M. (2010). A Poverty of Rights: Six Ways to fix the MDGs. *IDS Bulletin* 41:1, 83-91.

Ledesma, C., Garonita, O. L., Flores, L. J., Tingzon, I., & Dalisay, D. (2020). Interpretable poverty mapping using social media data, satellite images, and geospatial information. arXiv preprint arXiv:2011.13563. https://stories.thinkingmachin.es/poverty-mapping-artificial-intelligence/

Ministry of Finance (MOF) Government of the People’s Republic of Bangladesh. (2015). Poverty and Inequality in Bangladesh: Journey Towards Progress (2014-2015). https://mof.portal.gov.bd/sites/default/files/files/mof.portal.gov.bd/page/83ea3b2c\_3a6e\_4073\_8261\_c4da472536be/poverty14-15EN.pdf

Moncayo, J. M. & Cafiero, C. (2022). “Hunger and food insecurity.” FAO. <<https://www.fao.org/hunger/en/>>

Morten Jerven & Deborah Johnston (2015) [Statistical Tragedy in Africa? Evaluating the Data Base for African Economic Development,](https://canvas.uw.edu/courses/1519013/files/86569125?wrap=1) The Journal of Development Studies 51:2, 111-115. DOI: [10.1080/00220388.2014.968141](https://doi.org/10.1080/00220388.2014.968141)

Moyer, J. D., Bohl, D., Hanna, T., Mapes, B. R., & Rafa, M. (2019). Assessing the impact of war on development in Yemen. Frederick S. Pardee Center for International Futures. Josef Korbel School of International Studies. Denver: Report for UNDP. https://yemen.un.org/sites/default/files/2019-09/Assessing%20the%20Impact%20of%20War%20on%20Development%20in%20Yemen.pdf

Namibia Statistics Agency. (2021). Namibia multidimensional poverty index (MPI) report 2021. https://ophi.org.uk/wp-content/uploads/Namibia\_MPI\_report\_2021.pdf

Nigeria National Bureau of Statistics. (2019). National Bureau of Statistics: 2019 Poverty and Inequality in Nigeria. https://nigerianstat.gov.ng

NITI Aayog (2021). NATIONAL MULTIDIMENSIONAL POVERTY INDEX: Baseline Report. MPI\_Report\_Final.indd (niti.gov.in)

NITI Aayog. (2021). SDG India Index & Dashboard 2020-21 – Partnerships in the Decade of Action. <<https://www.niti.gov.in/writereaddata/files/SDG_3.0_Final_04.03.2021_Web_Spreads.pdf>>

Nyasulu, G. (2010). Revisiting the Definition of Poverty. *Journal of Sustainable Development in Africa*. 12:7, 147-158.

OPHI & UNDP. (2020). Global MPI 2020–Charting pathways out of multidimensional poverty: Achieving the SDGs. <<https://hdr.undp.org/sites/default/files/2020_mpi_report_en.pdf>>

PAHO, FAO, WFP, UNICEF. (2021) Latin America and the Caribbean-Regional Overview of Food Security and Nutrition 2021: Statistics and Trends. https://www.paho.org/en/documents/latin-america-and-caribbean-regional-overview-food-security-and-nutrition-2021-statistics

Pritchett, L. (2006) Who Is Not Poor? Dreaming of a World Truly Free of Poverty. *The World Bank Research Observer* 21:1, 1-23.

Saunders, P. (1980). What's wrong with the poverty line?. *Australian Quarterly*, *52*(4), 388-397.

Sen, A. (1981). Issues in the Measurement of Poverty. In *Measurement in Public Choice* (pp. 144-166). Palgrave Macmillan, London.

Stephen O’Connell and Don Sillers (2016). Person-Equivalent Poverty: An Introduction. Economics Brief: Person-Equivalent Poverty (usaid.gov)

USAID (2013). Getting to Zero: A Discussion Paper on Ending Extreme Poverty. https://www.usaid.gov/sites/default/files/documents/1870/USAID-Extreme-Poverty-Discussion-Paper.pdf

USAID. (2021). Economic Growth Policy Report. https://www.usaid.gov/sites/default/files/documents/EG\_Policy\_Final\_1.12.2021.pdf

USAID. (2022). Landscape Analysis: Tracking the First- and Second-Order Impacts of COVID-19. https://www.usaid.gov/sites/default/files/documents/2022\_Landscape\_Analysis\_-\_02\_07\_2022.pdf

Vedran Sekara (2018). Using frontier technology & data to monitor child poverty in Iraq. UNICEF article. <https://www.unicef.org/innovation/stories/using-frontier-technology-data-monitor-child-poverty-iraq>

Whelan, C.T., Maître, B. Comparing poverty and deprivation dynamics: Issues of reliability and validity. *J Econ Inequal* **4,**303–323 (2006). <https://doi.org/10.1007/s10888-005-9017-1>

Wollburg, P., M. Tiberti and A. Zezza (2021). Recall Length and Measurement Error in Agricultural Survey. 50x2030 Working Paper Series.

Woodward, D. (2015) *Incrementum ad Absurdum*: Global Growth, Inequality, and Poverty Eradication in a Carbon-Constrained World. *World Economic Review* 4, 43-62.

World Bank. 2020. *Poverty and Shared Prosperity 2020: Reversals of Fortune.* Washington, DC: World Bank. doi: 10.1596/978-1-4648-1602-4.

World Bank. 2022. Poverty and Inequality Platform Methodology Handbook: Chapter 2 Constructing welfare aggregates. World Bank Group. <<https://worldbank.github.io/PIP-Methodology/welfareaggregate.html>>

Appendix A: Common Acronyms

AfDB African Development Bank

AGFUND Arab Gulf Programme for Development

BMGF Bill & Melinda Gates Foundation

DFID U.K. Department of International Development

FAO Food and Agriculture Organization of the United Nations

IADB Inter-American Development Bank

IFAD International Fund for Agricultural Development

ILO International Labour Organization

IMF International Monetary Fund

LAS League of Arab States

NSF National Science Foundation

OECD Organisation for Economic Co-operation and Development

OFID OPEC Fund for International Development

OPEC Organization of the Petroleum Exporting Countries

PAHO Pan American Health Organization

SIDA Swedish International Development Cooperation Agency

UNDP United Nations Development Programme

UNESCO United Nations Educational, Scientific and Cultural Organization

UNFPA United Nations Population Fund

UNICEF United National Children’s Fund

USAID U.S. Agency for International Development

WFP World Food Programme

WHO World Health Organization

MPI Multidimensional Poverty Index

MPM Multidimensional Poverty Measure (WB)
HDI Human Development Index

Appendix B: Indicator Summaries: Note: information is taken usually verbatim from the Organizational Sources in the “link.” Ranking of ease of calculation, interpretation, comparability and dimensions are subjective assessments by the authors.

Table B1: Asset Index (AI)

|  |
| --- |
| Asset Index (AI) |
| Weighted average of three categories of assets: household durables, housing quality and human capital. |
| Indicator Type | Poverty |
| Methodology | To construct an index of the household assets requires selecting a set of weights for each asset. That is, we want an index of the form A = y1a1 + ...ykak where A is the asset index, the a1's are the individual assets recorded in the survey, and the y's are the weights, which we must estimate. The assets included in the index can be placed into three categories: household durables, housing quality and human capital. The household durables consist of indicators of ownership of radios, stereos, TVs, sewing machines, stoves, refrigerators, bicycles, and motorized transportation (motorcycles and/or cars). The housing quality includes indicator variables for source of drinking water (piped or surfacewater relative to well water), toilet facilities (flush or no facilities relative to pit or latrine facilities), cooking fuel (gas or electricity), and household construction material (indicators for quality of floors). We also include the years of education of the household head to account for household’s stock of human capital. The weights are then estimated from factor analyses on assets from each of our datasets. As expected the weights on the indicators of lack of assets (i.e. surface drinking water, no toilet facilities, and low quality floors) are negative, while the weights on all of the indicators of access to assets are positive. The weights for particular assets are generally of similar magnitude across the surveys. |
| Formula | Ai = Y1ai1 + ...+Ykaik where Ai is the asset index, the aik's are the individual assets recorded in the survey, and the Y's are the weights, which we must estimate. |
| Method of Aggregation | Weighted average |
| Indicator Range | [0;1] |
| Higher Poverty at Higher/Lower Value | Lower |
| Measured Poverty Component(s) | Proxy |
| Proxy Components | Assets |
| Multidimensional | No |
| Indicator Disaggregation | None |
| Threshold vs. Poverty Line | N/A |
| Count vs. Depth | Other |
| Data Sources | LSMS |
| Commentary on Data Sources | Living Standards Measurement Study (LSMS) and LSMS-type household surveys for Cote d’Ivoire, Ghana, Jamaica, Madagascar, Nepal, Pakistan, Papua New Guinea, Peru, South Africa and Vietnam |
| Organization Producing Indicator | Authors: Sahn and Stifel (2000) and Filmer and Prichett (2001) |
| Organization(s) Using Indicator | World Bank, Wilshire, DHS, Goldman Sachs Indices, UNICEF, UNDP, IFAD, FAO, WFP, USAID |
| Organizational Uses of Indicator | To compare results using various methods, to construct asset indices match results using per capita expenditures. |
| Government(s) Using Indicator | N/A |
| Governmental Uses of Indicator | N/A |
| Geographic Coverage (Number of Countries) | 10 |
| Earliest Year of Indicator | 1988 |
| Frequency of Indicator Production | +/- Annually |
| Link | https://onlinelibrary.wiley.com/doi/full/10.1111/j.0034-6586.2003.00100.x |
| Ease of Calculation | Low |
| Ease of Interpretation | Low |
| Ease of Comparability | High |
| More than one deprivation | No |
| Reflects depth or intensity | Yes |
| Current Organizational Uptake | Medium |

Table B2: Facebook Relative Wealth Index (RWI)

|  |
| --- |
| Facebook Relative Wealth Index (RWI) |
| Estimates of relative wealth at 2.4km resolution based on DHS surveys and machine learning. |
| Indicator Type | Poverty |
| Methodology | First, the approach relies on "ground truth" measurements of household wealth collected on face to face household surveys coming from 56 LMICs around the world using the Demographic Health Survey (DHS). The DHS provides enough data to construct a standardized indicator on the average asset-based wealth of each village. Then by using spatial markers in the DHS the approach links the wealth indicator with nontraditional digital data including satellite imagery, data from mobile phone networks, topographic maps, and aggregated and deidentified connectivity data from Facebook. These raw data are processed using deep learning techniques to construct quantitative features at the village level. Then, these quantitative feature data are used to train a supervised machine-learning model that predicts the relative wealth of every 2.4km grid cells in LMICs that do not necessarily have "ground truth" data available. Finally, the estimates are validated by using different sources of ground truth data (census survey data, and nationally representative household surveys in Togo, Nigeria, and Kenya). |
| Formula | Machine learning techniques so each nontraditional input has different relative weights predicting the relative wealth index. Inputs such as number of mobile devices, number of Wi-Fi access points, number of cell towers, number of android devices, road density (km/km2), or if urban or built up were the most relevant inputs used in the model. |
| Method of Aggregation | Machine learning |
| Indicator Range | [-1;1] |
| Higher Poverty at Higher/Lower Value | Lower |
| Measured Poverty Component(s) | Novel |
| Proxy Components | N/A |
| Multidimensional | No |
| Indicator Disaggregation | None |
| Threshold vs. Poverty Line | N/A |
| Count vs. Depth | Depth of Poverty |
| Data Sources | DHS |
| Commentary on Data Sources | The first step is to use the DHS for 56 LMIC to train the Algorithm, High-resolution satellite imagery data, mobile phone network data, topographic maps, and connectivity data from Facebook. |
| Organization Producing Indicator | Meta Data for Good (Previously Facebook) |
| Organization(s) Using Indicator | Meta Data for Good, CEGA, World Bank |
| Organizational Uses of Indicator | Meta: Provides micro-estimates of wealth and poverty for low- and middle-income countries at 2.4 km resolution. CEGA: In the large number of LMICs that have not conducted a recent nationally representative household survey, these micro-estimates create an option for geographic targeting that would otherwise not exist. |
| Government(s) Using Indicator | Nigeria, Togo |
| Governmental Uses of Indicator | Nigeria: Useful for identifying pockets of poverty and potential beneficiaries for the Rapid Response Register for the COVID-19 cash transfer project; Togo: using these estimates to target mobile money transfers to hundreds of thousands of the country's poorest |
| Geographic Coverage (Number of Countries) | 93 |
| Earliest Year of Indicator | 2021 |
| Frequency of Indicator Production | Contingent on DHS survey data release |
| Link | https://dataforgood.facebook.com/dfg/tools/relative-wealth-index#resources |
| Ease of Calculation | Low |
| Ease of Interpretation | Low |
| Ease of Comparability | Low |
| More than one deprivation | No |
| Reflects depth or intensity | Yes |
| Current Organizational Uptake | Low |

Table B3: IHME estimates of extreme poverty (IHME)

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| IHME estimates of extreme poverty (IHME) |
| Modeled estimates and projections of extreme poverty for 195 countries based on $1.90/day World Bank counts and additional predictive covariates (GDP per capita, female education, and energy consumption). |
| Indicator Type | Poverty |
| Methodology | The Institute for Health Metrics and Evaluation (IHME) has produced estimates of the extreme poverty counts and rates from 1990 to 2050. Extreme poverty rate (hereafter referred to as poverty rate) is defined as the fraction of the population living at or below $1.90 per day, measured using 2011 purchasing-power parity-adjusted dollars. In order to generate a complete and consistent time-series, we used spatiotemporal Gaussian process regression (ST-GPR), a Bayesian method used in the Global Burden of Disease (GBD) study, to estimate poverty rates in 195 countries from 1980 through 2017 (10). ST-GPR is a three step modeling process. First, a linear mixed effects model was run with a set of predictive covariates (GDP per capita, female education, and energy consumption, see Table #1). Predictions from the first step provide the general trend within the data. In the second step, spatiotemporal patterns were estimated by applying a series of spatiotemporal weights to average the residuals of the first step linear model. These spatiotemporal patterns were then added to the linear prediction to generate spatiotemporal predictions. Finally, the spatiotemporal predictions served as the mean function of a Gaussian process regressions run across time on the data. Estimates from the Gaussian process regressions served as final ST-GPR predictions and generated a complete time-series of estimates from 1990 to 2017 in 195 countries, building from data when available and borrowing strength across time, geography, and covariates’ predictive power when data was not available. |
| Formula | NA (See methodology description) |
| Method of Aggregation | Spatiotemporal Gaussian process regression |
| Indicator Range | % (0-100) |
| Higher Poverty at Higher/Lower Value | Higher |
| Measured Poverty Component(s) | GDP, Proxy |
| Proxy Components | N/A |
| Multidimensional | Yes |
| Indicator Disaggregation | None |
| Threshold vs. Poverty Line | Poverty line: Absolute |
| Count vs. Depth | Count |
| Data Sources | HBS, HIES, IHS, LFS, LISD, LSMS, PS |
| Commentary on Data Sources | Model uses World Bank World Development Indicators as inputs, which are based on the following data sources: primary household survey data obtained from government statistical agencies and World Bank country departments. Household survey data include the following: Core Welfare Indicator Questionnaire Survey 2010-2014. Expenditure survey/budget survey (ES/BS) 1999-2017. Income survey (IS) 2014-2017. Integrated household survey (IHS), 1992-2018. Labor force survey (LFS), 1999-2016. Living Standards Measurement Study Survey (LSMS), 1998-2017. Priority survey (PS), 1993 -2017. Data for high-income economies are from the Luxembourg Income Study database. |
| Organization Producing Indicator | Institute for Health Metrics and Evaluation |
| Organization(s) Using Indicator | Gates foundation, ourworldindata.org, IHME |
| Organizational Uses of Indicator | The foundation used these estimates because they are more sensitive to economic shocks. Recently they used these to generate a set of contemporary estimates for how the pandemic has interrupted global progress on the SDGs. |
| Government(s) Using Indicator | N/A |
| Governmental Uses of Indicator | N/A |
| Geographic Coverage (Number of Countries) | 195 |
| Earliest Year of Indicator | 1980 |
| Frequency of Indicator Production | Once (single forthcoming publication) |
| Link | http://www.healthdata.org/methods-estimating-past-and-future-extreme-poverty |
| Ease of Calculation | Low |
| Ease of Interpretation | High |
| Ease of Comparability | High |
| More than one deprivation | Yes |
| Reflects depth or intensity | No |
| Current Organizational Uptake | Low |

Table B4: Index of Multiple Deprivation (IMD)

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| Index of Multiple Deprivation (IMD) |
| Weighted average of deprivation in seven domains: Income, Employment, Health and Disability, Education Skills and Training, Barriers to Housing and Services, Living Environment, and Crime. Rankings only generated for subnational areas of United Kingdom. |
| Indicator Type | Poverty |
| Methodology | The overall Index of Multiple Deprivation 2015 describes each Lower-layer Super Output Area by combining information from all seven domains: Income Deprivation, Employment Deprivation, Health Deprivation and Disability, Education Skills and Training Deprivation, Barriers to Housing and Services, Living Environment Deprivation, and Crime. The domains were combined in two stages. First, each domain score was standardized by ranking, and then transformed to an exponential distribution. Then the domains were combined using the explicit domain weights chosen. The overall Lower-layer Super Output Area level Index of Multiple Deprivation score was then ranked and split into deciles. |
| Formula | Income Deprivation Domain x domain-weight + Employment Deprivation Domain x domain-weight + Health Deprivation and Disability Domain x domain-weight + Education, Skills and Training Deprivation Domain x domain-weight + Barriers to Housing and Services Domain x domain-weight + Crime Domain x domain-weight + Living Environment Deprivation Domain x domain-weight. |
| Method of Aggregation | Weighted average |
| Indicator Range | [1;32844] |
| Higher Poverty at Higher/Lower Value | Lower |
| Measured Poverty Component(s) | Proxy |
| Proxy Components | Access to Economic Opportunities, Assets |
| Multidimensional | Yes |
| Indicator Disaggregation | Age |
| Threshold vs. Poverty Line | N/A |
| Count vs. Depth | Depth of Poverty |
| Data Sources | CEN |
| Commentary on Data Sources | "For the income deprivation domain was sourced from databases held by the Department for Work and Pensions and HM Revenue & Customs. For the employment deprivation domain data was provided by the Department for Work and Pensions, constructed from administrative records. For the education domain, data was supplied by the Department for Education from the National Pupil Database. For the Health Deprivation domain, data was provided by the National Statistics Office, and Health and Social Care Information Centre from the Hospital Episode Statistics database. Crime domain data was provided was made available via the Association of Chief Police Officers and the Home Office. For the Barriers for housing and services domain, Census data, the Family Resources Survey, Annual Population Survey and the Annual Survey of Hours and Earnings. For the Living Environment Deprivation domain, air quality data published by the UK Air Information Resource was used. |
| Organization Producing Indicator | English Ministry of Housing, Communities & Local Government |
| Organization(s) Using Indicator | World Bank, UNICEF, Oxford Institute of Social Policy, UNDP, WHO, OECD |
| Organizational Uses of Indicator | UNICEF used Index of Multiple Deprivations in Bulgaria to identify lagging municipalities and guide prioritization. |
| Government(s) Using Indicator | UK, Canada, Australia |
| Governmental Uses of Indicator | UK: Follows an established methodological framework in broadly defining deprivation to encompass a wide range of an individual’s living conditions. |
| Geographic Coverage (Number of Countries) | 4 |
| Earliest Year of Indicator | 2000 |
| Frequency of Indicator Production | Quadrennially |
| Link | https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\_data/file/464485/English\_Indices\_of\_Deprivation\_2015\_-\_Technical-Report.pdf |
| Ease of Calculation | Low |
| Ease of Interpretation | Medium |
| Ease of Comparability | Low |
| More than one deprivation | Yes |
| Reflects depth or intensity | Yes |
| Current Organizational Uptake | Medium |

Table B5: International Wealth Index (IWI)

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| International Wealth Index (IWI) |
| The International Wealth Index, or IWI, is a comparable asset-based wealth index that can be used to measure the level of material well-being or standard of living of households in low and middle income countries. |
| Indicator Type | Poverty |
| Methodology | IWI was constructed in the same way as most other asset-based wealth indices, by performing Principal Component Analysis on a database with asset information of households. However, whereas most other wealth indices use data for one country at one point in time, IWI is based on data for 2.1 million households derived from 165 datasets for 97 countries, covering a period of 15 years. |
| Formula | 𝐼𝑊𝐼=100⋅(∑𝛽𝑛⋅𝑥𝑛+2.318)9.271=25.004+∑𝛽′𝑛⋅𝑥𝑛 |
| Method of Aggregation | Weighted average |
| Indicator Range | [0;100] |
| Higher Poverty at Higher/Lower Value | Lower |
| Measured Poverty Component(s) | Proxy |
| Proxy Components | Assets |
| Multidimensional | No |
| Indicator Disaggregation | None |
| Threshold vs. Poverty Line | N/A |
| Count vs. Depth | Count |
| Data Sources | AFB, AMB, DHS, ILO-IPEC, MICS, PAPFAM, WHS |
| Commentary on Data Sources | Demographic and Health Surveys, UNICEF MICS surveys, AmericasBarometers, Afro Barometers, World Health Surveys, the Integrated Public Use Microdata Series (IPUMS) of the Minnesota Population Center, the Pan Arabic Project for Family Health (PAPFAM) surveys, with the League of Arab States as major sponsor, the Statistical Information and Monitoring Programme on Child Labor surveys of ILO-IPEC, and the 2004 Chinese Health and Nutrition Survey and some stand-alone surveys |
| Organization Producing Indicator | Global Data Lab |
| Organization(s) Using Indicator | WFP, DHS, Gates Foundation |
| Organizational Uses of Indicator | Global Data Lab: Stable and understandable yardstick for comparing the performance of countries with regard to wealth, inequality, and poverty. PAHO: Contribute to the policy dialogue for post-pandemic recovery, which is fundamental to closing gaps in equality and meeting the goals of the 2030 Agenda for Sustainable Development. |
| Government(s) Using Indicator | India, Ethiopia |
| Governmental Uses of Indicator | India and Ethiopia: Calculated using easy to collect data |
| Geographic Coverage (Number of Countries) | 97 |
| Earliest Year of Indicator | 1992 |
| Frequency of Indicator Production | Annually |
| Link | https://globaldatalab.org/iwi/ |
| Ease of Calculation | Low |
| Ease of Interpretation | Low |
| Ease of Comparability | High |
| More than one deprivation | No |
| Reflects depth or intensity | No |
| Current Organizational Uptake | Low |

Table B6: Lived Poverty Index (LPI)

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| Lived Poverty Index (LPI) |
| LPI is the average of a Likert-type scale asking whether respondents had access to food, cooking fuel, clean water, cash income, and medical care. |
| Indicator Type | Poverty |
| Methodology | Field teams interview respondents using a 0-4 scale asking how frequently they had to go without each dimension in the past year. The sampling frame is all citizens of voting age in the country. Scores are then averaged using a probability weight proportional to population size. |
| Formula | LPI = ∑i=0:n LPIi\*wt/∑wt |
| Method of Aggregation | Weighted Average |
| Indicator Range | 0-4 |
| Higher Poverty at Higher/Lower Value | Higher |
| Measured Poverty Component(s) | Proxy |
| Proxy Components | Access to Economic Opportunities, Food Security |
| Multidimensional | Yes |
| Indicator Disaggregation | Gender, Age, Rural/Urban |
| Threshold vs. Poverty Line | Threshold: Global; Poverty line: Absolute |
| Count vs. Depth | Both |
| Data Sources | AFB |
| Commentary on Data Sources | N/A |
| Organization Producing Indicator | Afrobarometer |
| Organization(s) Using Indicator |  |
| Organizational Uses of Indicator | Used as a comparison with other methods of poverty estimation to determine progress toward SDG 1 |
| Government(s) Using Indicator | N/A |
| Governmental Uses of Indicator | N/A |
| Geographic Coverage (Number of Countries) | 33 |
| Earliest Year of Indicator | 1999 |
| Frequency of Indicator Production | ~3 years |
| Link | https://afrobarometer.org |
| Ease of Calculation | Low |
| Ease of Interpretation | Medium |
| Ease of Comparability | High |
| More than one deprivation | Yes |
| Reflects depth or intensity | Yes |
| Current Organizational Uptake | Low |

Table B7: Machine-learning guided classification of satellite imagery

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| Machine-learning guided classification of satellite imagery |
| Machine learning estimates of cluster-level expenditures and assets based on nighttime light intensity and DHS/LSMS expenditure/asset measurements. |
| Indicator Type | Poverty |
| Methodology | First, a convolutional neural network model (CNN) is pre-trained with Imagenet – a large dataset with labeled images allowing the model to learn how to classify and identify low level images features required for vision tasks. Then, the CNN is trained to predict the nighttime light intensities – proxy for economic activity, using daytime satellite imagery as input. Here, the model learns to “summarize” the high-dimensional input daytime satellite images as a lower dimensional set of image features that can predict nighttime light intensity. Now, the trained model can extract relevant features by learning nonlinear mapping from each input image to a concise feature vector representation. Finally, by using the LSMS and DHS data sources to construct mean cluster-level values from the surveys of expenditure or assets respectively, and the mentioned image features extracted using daytime satellite imagery data, the CNN is trained ridge regression models that can estimate cluster-level expenditure/assets variables. |
| Formula | Methodology involves machine learning techniques, ridge regression models that use daytime satellite imagery as input to predict daily per capita consumption expenditure (LSMS) or asset based indicators (DHS). It does not mention the relative weight of each input used to predict poverty outcomes. A ridge regression model looks like the following: Y = XB + e, where Y would be the predicted daily per capita consumption expenditure/asset based indicator, and X a vector of daytime satellite imagery input. |
| Method of Aggregation | Ridge Regression |
| Indicator Range | $ (Estimated daily per capita consumption expenditure) |
| Higher Poverty at Higher/Lower Value | Lower |
| Measured Poverty Component(s) | Novel |
| Proxy Components | N/A |
| Multidimensional | No |
| Indicator Disaggregation | None |
| Threshold vs. Poverty Line | N/A |
| Count vs. Depth | Depth of Poverty |
| Data Sources | DHS, LSMS |
| Commentary on Data Sources | N/A |
| Organization Producing Indicator | Sustainability and artificial intelligence lab -Stanford University |
| Organization(s) Using Indicator | G20, Mo Ibrahim Foundation |
| Organizational Uses of Indicator | All: These estimates are provided free for public use in the hope that they enable targeted policy response to humanitarian crises, provide the foundation for new insights into the causes and consequences of economic development and growth, and promote responsible policymaking in support of the Sustainable Development Goals. |
| Government(s) Using Indicator | Colombia, Philippines, Thailand, Nigeria |
| Governmental Uses of Indicator | Colombia: Used to fill in data gaps and identify people at risk of being left behind despite an aggregate picture that shows the country making progress overall towards its development goals. |
| Geographic Coverage (Number of Countries) | 5 |
| Earliest Year of Indicator | 2011 |
| Frequency of Indicator Production | Once |
| Link | http://sustain.stanford.edu/predicting-poverty |
| Ease of Calculation | Low |
| Ease of Interpretation | Low |
| Ease of Comparability | Medium |
| More than one deprivation | No |
| Reflects depth or intensity | Yes |
| Current Organizational Uptake | Medium |

Table B8: Global Multidimensional Poverty Index (MPI)

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| MPI: Global Multidimensional Poverty Index (MPI) |
| The MPI is constructed by multiplying the headcount ratio by the intensity of poverty. Adjusted headcount ratio for individuals deemed deprived in at least 1/3 of ten categories, weighted by intensity of poverty (average number of deprivations). |
| Indicator Type | Poverty |
| Methodology | The global Multidimensional Poverty Index (MPI) identifies multiple deprivations at the household level in health (i.e. nutrition, child mortality), education (i.e. years of schooling, school attendance) and standard of living (i.e. cooking fuel, sanitation, drinking water, electricity, housing, and assets). Each person is assigned a deprivation score according to his or her household’s deprivations in each of the 10 indicators. The maximum deprivation score is 100 percent, with each dimension equally weight- ed; thus, the maximum deprivation score in each dimension is 33.3 percent or, more accurately, 1/3. The health and education dimensions have two indicators each, so each indicator is weighted as 1/6. The standard of living dimension has six indicators, so each indicator is weighted as 1/18. To identify multidimensionally poor people, the deprivation scores for each indicator are summed to obtain the household deprivation score. A cutoff of 1/3 is used to distinguish between poor and nonpoor people. If the deprivation score is 1/3 or higher, that household (and everyone in it) is considered multi- dimensionally poor. People with a deprivation score of 1/5 or higher but less than 1/3 are vulnerable to multidimensional poverty. People with a deprivation score of 1/2 or higher are in severe multidimensional poverty. The headcount ratio, H, or incidence of multidimensional poverty is the proportion of multidimensionally poor people in the population: H = q/n where q is the number of people who are multidimensionally poor and n is the total population. The intensity of poverty, A, reflects the average proportion of the weighted component indicators in which multidimensionally poor people are deprived. For multidimensionally poor people only (those with a deprivation score greater than or equal to 33.3 percent), the deprivation scores are summed and divided by the total number of multidimensionally poor people: A = ∑1qsi /q Where si is the deprivation score that the ith multidimensionally poor person experiences. The deprivation score si of the ith multidimensionally poor person can be expressed as the sum of the weights associated with each indicator j ( j = 1, 2, ..., 10) in which person i is deprived, si = ci1 + ci2 + ... + ci10. The MPI value is the product of two measures: the incidence of multidimensional poverty and the intensity of poverty: MPI = H\*A. For a technical note on the methodology construction visit http://hdr.undp.org/sites/default/files/mpi2021\_technical\_notes.pdf |
| Formula | 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 weighted deprivation score is equal to or higher than the poverty cutoff of 33.33%. After the poverty identification step, we aggregate across individuals to obtain the incidence of poverty or headcount ratio (H) which represents the proportion of poor people. We then compute the intensity of poverty (A), representing the average number of weighted deprivations experienced by the poor. We then compute the adjusted poverty headcount ratio (M0) or MPI by combining H and A in a multiplicative form (MPI = H x A). |
| Method of Aggregation | Multistep process which combines a weighted average (A) and a linear aggregation (H) |
| Indicator Range | [0;1] |
| Higher Poverty at Higher/Lower Value | Higher |
| Measured Poverty Component(s) | Proxy |
| Proxy Components | Assets, Food Security |
| Multidimensional | Yes |
| Indicator Disaggregation | Gender, Age, Rural/Urban, Ethnicity, Caste |
| Threshold vs. Poverty Line | Threshold: Global |
| Count vs. Depth | Both |
| Data Sources | DHS, MICS |
| Commentary on Data Sources | The 2021 global MPI estimations are based on survey data from 109 countries. MICS, DHS, Bolivian national survey that closely follows DHS structure. PAPFAM data (Morocco). |
| Organization Producing Indicator | Oxford Poverty and Human Development Initiative; United Nations Development Programme |
| Organization(s) Using Indicator | WorldPop, World Data Lab, Stanford Sustainability and Artificial Intelligence Lab, AIDDATA, Data Intensive Development Lab, CEGA, Paris21, Asian Development Bank, World Bank, UNICEF, UNDP, WFP |
| Organizational Uses of Indicator | OECD: The MPI identifies deprivations across health, education, and living standards, and shows the number of people who are multidimensionally poor and the deprivations that they face at the household level. UNDP: Sheds light on disparities in how people experience poverty, revealing vast inequalities among countries and among the poor themselves. FAO: This indicator is used in defining the Prevalence of undernourishment SDG. |
| Government(s) Using Indicator | India, Namibia |
| Governmental Uses of Indicator | India: Recognition of the need to complement money-metric poverty based on consumption with multidimensional measures. |
| Geographic Coverage (Number of Countries) | 109 |
| Earliest Year of Indicator | 2010 |
| Frequency of Indicator Production | Annually |
| Link | https://ophi.org.uk/multidimensional-poverty-index/, https://public.tableau.com/app/profile/ayush8576/viz/databank2021-Copy/GlobalDashboard |
| Ease of Calculation | Low |
| Ease of Interpretation | Low |
| Ease of Comparability | High |
| More than one deprivation | Yes |
| Reflects depth or intensity | Yes |
| Current Organizational Uptake | High |

Table B9: Headcount of Multidimensional Poverty Index Severe poverty (MPI)

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| MPI: Headcount of Multidimensional Poverty Index Severe poverty (MPI) |
| Subset of MPI headcount ratio, defined as deprivation in at least half of ten poverty dimensions. |
| Indicator Type | Poverty |
| Methodology | [Note: the headcount of severe poverty is a subset of MPI headcount ratio, defined as deprivation in at least half of ten poverty dimensions.] The global Multidimensional Poverty Index (MPI) identifies multiple deprivations at the household level in health (i.e. nutrition, child mortality), education (i.e. years of schooling, school attendance) and standard of living (i.e. cooking fuel, sanitation, drinking water, electricity, housing, and assets). Each person is assigned a deprivation score according to his or her household’s deprivations in each of the 10 indicators. The maximum deprivation score is 100 percent, with each dimension equally weight- ed; thus, the maximum deprivation score in each dimension is 33.3 percent or, more accurately, 1/3. The health and education dimensions have two indicators each, so each indicator is weighted as 1/6. The standard of living dimension has six indicators, so each indicator is weighted as 1/18. To identify multidimensionally poor people, the deprivation scores for each indicator are summed to obtain the household deprivation score. A cutoff of 1/3 is used to distinguish between poor and nonpoor people. If the deprivation score is 1/3 or higher, that household (and everyone in it) is considered multi- dimensionally poor. People with a deprivation score of 1/5 or higher but less than 1/3 are vulnerable to multidimensional poverty. People with a deprivation score of 1/2 or higher are in severe multidimensional poverty. The headcount ratio, H, or incidence of multidimensional poverty is the proportion of multidimensionally poor people in the population: H = q/n where q is the number of people who are multidimensionally poor and n is the total population. The intensity of poverty, A, reflects the average proportion of the weighted component indicators in which multidimensionally poor people are deprived. For multidimensionally poor people only (those with a deprivation score greater than or equal to 33.3 percent), the deprivation scores are summed and divided by the total number of multidimensionally poor people: A = ∑1qsi /q Where si is the deprivation score that the ith multidimensionally poor person experiences. The deprivation score si of the ith multidimensionally poor person can be expressed as the sum of the weights associated with each indicator j ( j = 1, 2, ..., 10) in which person i is deprived, si = ci1 + ci2 + ... + ci10. The MPI value is the product of two measures: the incidence of multidimensional poverty and the intensity of poverty: MPI = H\*A. For a technical note on the methodology construction visit http://hdr.undp.org/sites/default/files/mpi2021\_technical\_notes.pdf |
| Formula | 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 weighted deprivation score is equal to or higher than the poverty cutoff of 33.33%. After the poverty identification step, we aggregate across individuals to obtain the incidence of poverty or headcount ratio (H) which represents the proportion of poor people. We then compute the intensity of poverty (A), representing the average number of weighted deprivations experienced by the poor. We then compute the adjusted poverty headcount ratio (M0) or MPI by combining H and A in a multiplicative form (MPI = H x A). A headcount ratio is also estimated for two other ranges of poverty cutoffs. The global MPI measure identifies those who are close to the one-third threshold, that is, individuals are vulnerable to multidimensional poverty if they are deprived in 20% to 33.33% of weighted indicators. The measure also specifies a higher poverty cutoff to identify those in severe poverty, meaning those deprived in 50% or more of the dimensions. |
| Method of Aggregation | Linear aggregation |
| Indicator Range | Number of people |
| Higher Poverty at Higher/Lower Value | Higher |
| Measured Poverty Component(s) | Proxy |
| Proxy Components | Assets, Food Security |
| Multidimensional | Yes |
| Indicator Disaggregation | Gender, Age, Rural/Urban, Ethnicity, Caste |
| Threshold vs. Poverty Line | Threshold: Other |
| Count vs. Depth | Count |
| Data Sources | DHS, MICS |
| Commentary on Data Sources | The 2021 global MPI estimations are based on survey data from 109 countries. MICS, DHS, Bolivian national survey that closely follows DHS structure. PAPFAM data (Morocco). |
| Organization Producing Indicator | Oxford Poverty and Human Development Initiative; United Nations Development Programme |
| Organization(s) Using Indicator | UNDP, Oxford Poverty and Human Development Initiative, The Rockefeller Foundation, UNICEF , CEPAL, World Bank, OECD, FERDI, OAS, WHO, IFAD, FAO, WFP |
| Organizational Uses of Indicator | Used to broadly explain how many people are poor |
| Government(s) Using Indicator | India, Namibia |
| Governmental Uses of Indicator | India: It draws from the capability approach by including multiple dimensions of poverty across the dimensions of health, education and living standards, and examines the “fundamental objective features” which affect the poor. |
| Geographic Coverage (Number of Countries) | 109 |
| Earliest Year of Indicator | 2010 |
| Frequency of Indicator Production | Annually |
| Link | https://ophi.org.uk/multidimensional-poverty-index/, https://public.tableau.com/app/profile/ayush8576/viz/databank2021-Copy/GlobalDashboard |
| Ease of Calculation | High |
| Ease of Interpretation | Medium |
| Ease of Comparability | High |
| More than one deprivation  | Yes |
| Reflects depth or intensity | No |
| Current Organizational Uptake | Medium |

Table B10: Headcount ratio of MPI poverty (%) [Component of MPI] (MPI)

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| MPI: Headcount ratio of MPI poverty (%) [Component of MPI] (MPI) |
| Headcount ratio for individuals deemed deprived in at least 1/3 of ten categories. |
| Indicator Type | Poverty |
| Methodology | [Note: the headcount ratio is a component of MPI. MPI = poverty headcount (H) x intensity of poverty (A).] The global Multidimensional Poverty Index (MPI) identifies multiple deprivations at the household level in health (i.e. nutrition, child mortality), education (i.e. years of schooling, school attendance) and standard of living (i.e. cooking fuel, sanitation, drinking water, electricity, housing, and assets). Each person is assigned a deprivation score according to his or her household’s deprivations in each of the 10 indicators. The maximum deprivation score is 100 percent, with each dimension equally weight- ed; thus, the maximum deprivation score in each dimension is 33.3 percent or, more accurately, 1/3. The health and education dimensions have two indicators each, so each indicator is weighted as 1/6. The standard of living dimension has six indicators, so each indicator is weighted as 1/18. To identify multidimensionally poor people, the deprivation scores for each indicator are summed to obtain the household deprivation score. A cutoff of 1/3 is used to distinguish between poor and nonpoor people. If the deprivation score is 1/3 or higher, that household (and everyone in it) is considered multi- dimensionally poor. People with a deprivation score of 1/5 or higher but less than 1/3 are vulnerable to multidimensional poverty. People with a deprivation score of 1/2 or higher are in severe multidimensional poverty. The headcount ratio, H, or incidence of multidimensional poverty is the proportion of multidimensionally poor people in the population: H = q/n where q is the number of people who are multidimensionally poor and n is the total population. The intensity of poverty, A, reflects the average proportion of the weighted component indicators in which multidimensionally poor people are deprived. For multidimensionally poor people only (those with a deprivation score greater than or equal to 33.3 percent), the deprivation scores are summed and divided by the total number of multidimensionally poor people: A = ∑1qsi /q Where si is the deprivation score that the ith multidimensionally poor person experiences. The deprivation score si of the ith multidimensionally poor person can be expressed as the sum of the weights associated with each indicator j ( j = 1, 2, ..., 10) in which person i is deprived, si = ci1 + ci2 + ... + ci10. The MPI value is the product of two measures: the incidence of multidimensional poverty and the intensity of poverty: MPI = H\*A. For a technical note on the methodology construction visit http://hdr.undp.org/sites/default/files/mpi2021\_technical\_notes.pdf |
| Formula | 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 weighted deprivation score is equal to or higher than the poverty cutoff of 33.33%. After the poverty identification step, we aggregate across individuals to obtain the incidence of poverty or headcount ratio (H) which represents the proportion of poor people. We then compute the intensity of poverty (A), representing the average number of weighted deprivations experienced by the poor. We then compute the adjusted poverty headcount ratio (M0) or MPI by combining H and A in a multiplicative form (MPI = H x A). |
| Method of Aggregation | Simple average |
| Indicator Range | % (0-100) |
| Higher Poverty at Higher/Lower Value | Higher |
| Measured Poverty Component(s) | Proxy |
| Proxy Components | Assets, Food Security |
| Multidimensional | Yes |
| Indicator Disaggregation | Gender, Age, Rural/Urban, Ethnicity, Caste |
| Threshold vs. Poverty Line | Threshold: Global |
| Count vs. Depth | Count |
| Data Sources | DHS, MICS |
| Commentary on Data Sources | The 2021 global MPI estimations are based on survey data from 109 countries. MICS, DHS, Bolivian national survey that closely follows DHS structure. PAPFAM data (Morocco). |
| Organization Producing Indicator | Oxford Poverty and Human Development Initiative; United Nations Development Programme |
| Organization(s) Using Indicator | World Bank, UNDP, OECD, UNICEF, OPHI, FAO, WFP |
| Organizational Uses of Indicator | Used to broadly explain how many people are poor |
| Government(s) Using Indicator | India, Namibia |
| Governmental Uses of Indicator | Used to broadly explain how many are poor |
| Geographic Coverage (Number of Countries) | 109 |
| Earliest Year of Indicator | 2010 |
| Frequency of Indicator Production | Annually |
| Link | https://ophi.org.uk/multidimensional-poverty-index/, https://public.tableau.com/app/profile/ayush8576/viz/databank2021-Copy/GlobalDashboard |
| Ease of Calculation | High |
| Ease of Interpretation | High |
| Ease of Comparability | High |
| More than one deprivation | Yes |
| Reflects depth or intensity | No |
| Current Organizational Uptake | Medium |

Table B11: Intensity of Poverty (%) [Component of MPI] (MPI)

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| --- |
| MPI: Intensity of Poverty (%) [Component of MPI] (MPI) |
| Average number of weighted deprivations experienced by the poor. |
| Indicator Type | Poverty |
| Methodology | [Note: the intensity of poverty is a component of MPI. MPI = poverty headcount (H) x intensity of poverty (A).] The global Multidimensional Poverty Index (MPI) identifies multiple deprivations at the household level in health (i.e. nutrition, child mortality), education (i.e. years of schooling, school attendance) and standard of living (i.e. cooking fuel, sanitation, drinking water, electricity, housing, and assets). Each person is assigned a deprivation score according to his or her household’s deprivations in each of the 10 indicators. The maximum deprivation score is 100 percent, with each dimension equally weight- ed; thus, the maximum deprivation score in each dimension is 33.3 percent or, more accurately, 1/3. The health and education dimensions have two indicators each, so each indicator is weighted as 1/6. The standard of living dimension has six indicators, so each indicator is weighted as 1/18. To identify multidimensionally poor people, the deprivation scores for each indicator are summed to obtain the household deprivation score. A cutoff of 1/3 is used to distinguish between poor and nonpoor people. If the deprivation score is 1/3 or higher, that household (and everyone in it) is considered multi- dimensionally poor. People with a deprivation score of 1/5 or higher but less than 1/3 are vulnerable to multidimensional poverty. People with a deprivation score of 1/2 or higher are in severe multidimensional poverty. The headcount ratio, H, or incidence of multidimensional poverty is the proportion of multidimensionally poor people in the population: H = q/n where q is the number of people who are multidimensionally poor and n is the total population. The intensity of poverty, A, reflects the average proportion of the weighted component indicators in which multidimensionally poor people are deprived. For multidimensionally poor people only (those with a deprivation score greater than or equal to 33.3 percent), the deprivation scores are summed and divided by the total number of multidimensionally poor people: A = ?1qsi /q Where si is the deprivation score that the ith multidimensionally poor person experiences. The deprivation score si of the ith multidimensionally poor person can be expressed as the sum of the weights associated with each indicator j ( j = 1, 2, ..., 10) in which person i is deprived, si = ci1 + ci2 + ... + ci10. The MPI value is the product of two measures: the incidence of multidimensional poverty and the intensity of poverty: MPI = H\*A. For a technical note on the methodology construction visit http://hdr.undp.org/sites/default/files/mpi2021\_technical\_notes.pdf |
| Formula | 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 weighted deprivation score is equal to or higher than the poverty cutoff of 33.33%. After the poverty identification step, we aggregate across individuals to obtain the incidence of poverty or headcount ratio (H) which represents the proportion of poor people. We then compute the intensity of poverty (A), representing the average number of weighted deprivations experienced by the poor. We then compute the adjusted poverty headcount ratio (M0) or MPI by combining H and A in a multiplicative form (MPI = H x A). |
| Method of Aggregation | Weighted average |
| Indicator Range | % (0-100) |
| Higher Poverty at Higher/Lower Value | Higher |
| Measured Poverty Component(s) | Proxy |
| Proxy Components | Assets, Food Security |
| Multidimensional | Yes |
| Indicator Disaggregation | Sex, Age, Rural/Urban, Ethnicity, Caste |
| Threshold vs. Poverty Line | Threshold: Global |
| Count vs. Depth | Depth of Poverty |
| Data Sources | DHS, MICS |
| Commentary on Data Sources | The 2021 global MPI estimations are based on survey data from 109 countries. MICS, DHS, Bolivian national survey that closely follows DHS structure. PAPFAM data (Morocco). |
| Organization Producing Indicator | Oxford Poverty and Human Development Initiative; United Nations Development Programme |
| Organization(s) Using Indicator | World Bank, UNDP, OECD, UNICEF, OPHI, IFAD, FAO |
| Organizational Uses of Indicator |  |
| Government(s) Using Indicator | India, Namibia |
| Governmental Uses of Indicator | Used to broadly explain how poor are the poor |
| Geographic Coverage (Number of Countries) | 109 |
| Earliest Year of Indicator | 2010 |
| Frequency of Indicator Production | Annually |
| Link | https://ophi.org.uk/multidimensional-poverty-index/, https://public.tableau.com/app/profile/ayush8576/viz/databank2021-Copy/GlobalDashboard |
| Ease of Calculation | Low |
| Ease of Interpretation | Medium |
| Ease of Comparability | High |
| More than one deprivation | Yes |
| Reflects depth or intensity | Yes |
| Current Organizational Uptake | Medium |

Table B12: Multidimensional poverty measure headcount ratio (% of population)

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| Multidimensional poverty measure headcount ratio (% of population) |
| World Bank World Development Indicators multidimensional poverty headcount (percent of population) |
| Indicator Type | Poverty |
| Methodology | The multidimensional poverty measure headcount ratio (MPM) is constructed using three dimensions of well-being using a total of 6 indicators: the monetary standards of living (monetary poverty indicator), the education dimension (educational attainment, and educational enrollment), and the access to basic infrastructure dimension (electricity, sanitation, and drinking water indicators). The 6 indicators are defined as follows: * Monetary poverty: a household is deprived if income/expenditure, in 2011 PPP US dollars is less than US$1.90 per person per day.
* Educational attainment: a household is deprived if no adult (grade 9 equivalent age or older) has completed primary education.
* Educational enrollment: a household is deprived if at least one school-age child up to the (equivalent) age of grade 8 is not enrolled in school.
* Electricity: a household is deprived if it does not have access to electricity.
* Sanitation: a household is deprived if it does not have access to limited- standard sanitation.
* Drinking water: a household is deprived if it does not have access to limited-standard drinking water.

These indicators are defined as 0/1 variables, where “1” means the individual or household is deprived in that indicator. Here, it is important to note that each indicator is restricted to reporting of access and not on the quality of these services due to the difficulties of collecting data on quality of service accurately and consistently using household surveys across countries. In the MPM, each dimension is weighted equally, and within each dimension, each indicator is also weighted equally. This means, that the maximum deprivation score in each dimension is 1/3. For example, the access to education dimension has two indicators, so each indicator is weighted as 1/6. Individuals are considered multidimensionally poor if they fall short of the threshold in at least one dimension or in a combination of indicators equivalent in weight to a full dimension. In other words, a cutoff of 1/3 is used to distinguish between poor and nonpoor, in which households will be considered poor if they are deprived in indicators whose weight add up to 1/3 or more. Because the monetary dimension is measured using only one indicator, anyone who is income poor is automatically also poor under the broader multidimensional poverty concept. |
| Formula | MPMt = 1/N \* ∑ I(ci>1/3) Here, I(.) is an indicator function that takes the value of 1 if the bracketed expression is true, and 0 otherwise. Ci is defined as the sum of the weighted indicators in which an individual i is deprived, so if an individual is deprived in indicators whose weight add up to 1/3 or more, the individual will be counted as multidimensionally deprived. MPMt is the total number of multidimensionally deprived at point t in time divided by total population. |
| Method of Aggregation | Weighted Average |
| Indicator Range | % (0-100) |
| Higher Poverty at Higher/Lower Value | Higher |
| Measured Poverty Component(s) | Proxy |
| Proxy Components | Access to Economic Opportunities, Assets |
| Multidimensional | Yes |
| Indicator Disaggregation | Sex, Age, Rural/Urban |
| Threshold vs. Poverty Line | Threshold: Global |
| Count vs. Depth | Count |
| Data Sources | CWIQ, HBS, HIES, ICP, IHS, LFS, LISD, LSMS, PS |
| Commentary on Data Sources | The latest estimates for each indicator in each country are derived from standardized and recent surveys in the World Bank’s Global Monitoring Database, April 2022. These harmonized surveys collect information on total household consumption or income for monetary poverty estimation as well as information on a host of other topics, including education enrollment, adult education attainment, and access to basic infrastructure services, which permits the construction of the MPM. However, there is considerable heterogeneity in how the questions are worded, how detailed the response choices are, and how closely they match the standard definitions of access. Despite best efforts to harmonize country-specific questionnaires to the standard definition, discrepancies with measures reported elsewhere may arise. The Global Monitoring Database (GMD) is a set of harmonized household surveys maintained by the Data for Goals (D4G) team of the Poverty and Equity Global Practice at the World Bank. The GMD is an ex-post harmonization effort based on available multitopic household surveys, including household budget surveys (HBS) and the Living Standards Measurement Study household surveys (LSMS). Data are based on primary household survey data obtained from government statistical agencies and World Bank country departments. Household survey data include the following: Core Welfare Indicator Questionnaire Survey. Expenditure survey/budget survey (ES/BS). Income survey (IS). Integrated household survey (IHS). Labor force survey (LFS). Living Standards Measurement Study Survey (LSMS). Priority survey (PS). Data for high-income economies are from the Luxembourg Income Study database. |
| Organization Producing Indicator | World Bank |
| Organization(s) Using Indicator | World Bank, OPHI, UNICEF, UNDP, OECD |
| Organizational Uses of Indicator | World Bank: to understand poverty beyond monetary deprivations (which remain the focal point of the World Bank’s monitoring of global poverty) by including access to education and basic infrastructure along with the monetary headcount ratio at the $1.90 international poverty line. OPHI: Focusing on one factor alone, such as income, is not enough to capture the true reality of poverty hence this indicator is used. OECD: 1. MPM has been used to: replace, or supplement, or combine with the official measures of income poverty. 2. to monitor the level and composition of poverty, and the reduction of poverty, over time. 3.to evaluate the impact of programs. 4.to target the poorest more effectively. 5.to identify poverty traps and chronic poverty. 6.to compare the composition of poverty. |
| Government(s) Using Indicator | United States, South Africa, United Kingdom |
| Governmental Uses of Indicator | US: to provide invaluable insights into the nature of poverty, dynamics among the poor, and the effects of inequality and marginalization. South Africa: To capture the multiple aspects that constitute poverty. |
| Geographic Coverage (Number of Countries) | 150 |
| Earliest Year of Indicator | 2010 |
| Frequency of Indicator Production | Annually |
| Link | https://www.worldbank.org/en/topic/poverty/brief/multidimensional-poverty-measure https://databank.worldbank.org/source/world-development-indicators#advancedDownloadOptions |
| Ease of Calculation | High |
| Ease of Interpretation | High |
| Ease of Comparability | High |
| More than one deprivation | Yes |
| Reflects depth or intensity | No |
| Current Organizational Uptake | Low |

Table B13: Poverty gap (Mean monthly income below $1.90 international poverty line) (PG)

|  |
| --- |
| Poverty gap (Mean monthly income below $1.90 international poverty line) (PG) |
| World Bank Poverty and Equity Poverty Gap ($1.90/day). |
| Indicator Type | Poverty |
| Methodology | Poverty gap at $1.90 a day (2011 PPP) is the mean shortfall in income or consumption from the poverty line $1.90 a day (counting the nonpoor as having zero shortfall), expressed as a percentage of the poverty line. This measure reflects the depth of poverty as well as its incidence. The current extreme poverty line is set at $1.90 a day in 2011 PPP terms, which represents the mean of the poverty lines found in 15 of the poorest countries ranked by per capita consumption. The new poverty line maintains the same standard for extreme poverty - the poverty line typical of the poorest countries in the world - but updates it using the latest information on the cost of living in developing countries. The statistics reported here are based on consumption data or, when unavailable, on income surveys. |
| Formula | The poverty gap index (PGI) which adds up the extent to which individuals fall below the poverty line (PL), and expresses it as a percentage of the poverty line. First, the poverty gap (PGi) for poor individual i is defined as the following: PGi = (PL-Yi)\* I(Yi<PL). Here, I(.) is a indicator function that takes the value of 1 if the bracketed expression is true, and 0 otherwise. So if household per capita consumption/income a day (Yi) for household i is below the poverty line (PL), then I(.) equals 1 and each individual in household i would be counted as poor. This means that individuals who are above the poverty line will have a poverty gap (PG) equal to zero. Following, the poverty gap index (PGI) is calculated as following: PGI = 1/N \* ∑PGi/PL |
| Method of Aggregation | Simple average |
| Indicator Range | % (0-100) |
| Higher Poverty at Higher/Lower Value | Higher |
| Measured Poverty Component(s) | Consumption & Income |
| Proxy Components | N/A |
| Multidimensional | No |
| Indicator Disaggregation | None |
| Threshold vs. Poverty Line | Threshold: Global; Poverty line: Absolute |
| Count vs. Depth | Depth of Poverty |
| Data Sources | CWIQ, HBS, HIES, ICP, IHS, LFS, LISD, LSMS, PS |
| Commentary on Data Sources | Data are based on primary household survey data obtained from government statistical agencies and World Bank country departments. Household survey data include the following: Core Welfare Indicator Questionnaire Survey 2010-2014. Expenditure survey/budget survey (ES/BS) 1999-2017. Income survey (IS) 2014-2017. Integrated household survey (IHS), 1992-2018. Labor force survey (LFS), 1999-2016. Living Standards Measurement Study Survey (LSMS), 1998-2017. Priority survey (PS), 1993 -2017. Data for high-income economies are from the Luxembourg Income Study database. |
| Organization Producing Indicator | World Bank |
| Organization(s) Using Indicator | World Bank, UNDP, OECD, UNICEF, OPHI, IFAD, FAO |
| Organizational Uses of Indicator | USAID: The poverty gap helps refine the poverty rate by providing an indication of the poverty level in a country and allows for comparisons. |
| Government(s) Using Indicator | India, Bangladesh, Nigeria, Sri Lanka, Philippines |
| Governmental Uses of Indicator | Sri Lanka: Provides more information than headcount to poverty alleviation policy makers and assistance to precise allocation of resources. |
| Geographic Coverage (Number of Countries) | 165 |
| Earliest Year of Indicator | 1981 |
| Frequency of Indicator Production | Annually |
| Link | https://databank.worldbank.org/source/world-development-indicators |
| Ease of Calculation | High |
| Ease of Interpretation | Medium |
| Ease of Comparability | High |
| More than one deprivation | No |
| Reflects depth or intensity | Yes |
| Current Organizational Uptake | Medium |

Table B14: Poverty gap (Mean monthly income below $3.20 international poverty line) (PG)

|  |
| --- |
| Poverty gap (Mean monthly income below $3.20 international poverty line) (PG) |
| World Bank Poverty and Equity Poverty Gap ($3.20/day). |
| Indicator Type | Poverty |
| Methodology | Poverty gap at $3.20 a day (2011 PPP) is the mean shortfall in income or consumption from the poverty line $3.20 a day (counting the nonpoor as having zero shortfall), expressed as a percentage of the poverty line. This measure reflects the depth of poverty as well as its incidence. Poverty measures based on international poverty lines attempt to hold the real value of the poverty line constant across countries, as is done when making comparisons over time. The $3.20 poverty line is derived from typical national poverty lines in countries classified as Lower Middle Income. The new poverty line maintains the same standard for extreme poverty - the poverty line typical of the poorest countries in the world - but updates it using the latest information on the cost of living in developing countries. The statistics reported here are based on consumption data or, when unavailable, on income surveys. |
| Formula | The poverty gap index (PGI) which adds up the extent to which individuals fall below the poverty line (PL), and expresses it as a percentage of the poverty line. First, the poverty gap (PGi) for poor individual i is defined as the following: PGi = (PL-Yi)\* I(Yi<PL). Here, I(.) is a indicator function that takes the value of 1 if the bracketed expression is true, and 0 otherwise. So if household per capita consumption/income a day (Yi) for household i is below the poverty line (PL), then I(.) equals 1 and each individual in household i would be counted as poor. This means that individuals who are above the poverty line will have a poverty gap (PG) equal to zero. Following, the poverty gap index (PGI) is calculated as following: PGI = 1/N \* ∑PGi/PL |
| Method of Aggregation | Simple average |
| Indicator Range | % (0-100) |
| Higher Poverty at Higher/Lower Value | Higher |
| Measured Poverty Component(s) | Consumption & Income |
| Proxy Components | N/A |
| Multidimensional | No |
| Indicator Disaggregation | None |
| Threshold vs. Poverty Line | Threshold: Global; Poverty line: Absolute |
| Count vs. Depth | Depth of Poverty |
| Data Sources | CWIQ, HBS, HIES, ICP, IHS, LFS, LISD, LSMS, PS |
| Commentary on Data Sources | Data are based on primary household survey data obtained from government statistical agencies and World Bank country departments. Household survey data include the following: Core Welfare Indicator Questionnaire Survey 2010-2014. Expenditure survey/budget survey (ES/BS) 1999-2017. Income survey (IS) 2014-2017. Integrated household survey (IHS), 1992-2018. Labor force survey (LFS), 1999-2016. Living Standards Measurement Study Survey (LSMS), 1998-2017. Priority survey (PS), 1993 -2017. Data for high-income economies are from the Luxembourg Income Study database. |
| Organization Producing Indicator | World Bank |
| Organization(s) Using Indicator | USAID, World Bank, OECD, Our World in Data, FAO, UNESCAP, UNICEF, WFP, WHO |
| Organizational Uses of Indicator | Measures the depth of poverty as well as the incidence. |
| Government(s) Using Indicator | N/A |
| Governmental Uses of Indicator | N/A |
| Geographic Coverage (Number of Countries) | 165 |
| Earliest Year of Indicator | 1981 |
| Frequency of Indicator Production | Annually |
| Link | https://databank.worldbank.org/source/world-development-indicators |
| Ease of Calculation | High |
| Ease of Interpretation | Medium |
| Ease of Comparability | High |
| More than one deprivation | No |
| Reflects depth or intensity | Yes |
| Current Organizational Uptake | Low |

Table B15: Poverty gap (Mean monthly income below $5.50 international poverty line) (PG)

|  |
| --- |
| Poverty gap (Mean monthly income below $5.50 international poverty line) (PG) |
| World Bank Poverty and Equity Poverty Gap ($5.50/day). |
| Indicator Type | Poverty |
| Methodology | Poverty gap at $5.50 a day (2011 PPP) is the mean shortfall in income or consumption from the poverty line $5.50 a day (counting the nonpoor as having zero shortfall), expressed as a percentage of the poverty line. This measure reflects the depth of poverty as well as its incidence. Poverty measures based on international poverty lines attempt to hold the real value of the poverty line constant across countries, as is done when making comparisons over time. The $5.50 poverty line is derived from typical national poverty lines in countries classified as Upper Middle Income. The new poverty line maintains the same standard for extreme poverty - the poverty line typical of the poorest countries in the world - but updates it using the latest information on the cost of living in developing countries. The statistics reported here are based on consumption data or, when unavailable, on income surveys. |
| Formula | The poverty gap index (PGI) which adds up the extent to which individuals fall below the poverty line (PL), and expresses it as a percentage of the poverty line. First, the poverty gap (PGi) for poor individual i is defined as the following: PGi = (PL-Yi)\* I(Yi<PL). Here, I(.) is a indicator function that takes the value of 1 if the bracketed expression is true, and 0 otherwise. So if household per capita consumption/income a day (Yi) for household i is below the poverty line (PL), then I(.) equals 1 and each individual in household i would be counted as poor. This means that individuals who are above the poverty line will have a poverty gap (PG) equal to zero. Following, the poverty gap index (PGI) is calculated as following: PGI = 1/N \* ∑PGi/PL |
| Method of Aggregation | Simple average |
| Indicator Range | % (0-100) |
| Higher Poverty at Higher/Lower Value | Higher |
| Measured Poverty Component(s) | Consumption & Income |
| Proxy Components | N/A |
| Multidimensional | No |
| Indicator Disaggregation | None |
| Threshold vs. Poverty Line | Threshold: Global; Poverty line: Absolute |
| Count vs. Depth | Depth of Poverty |
| Data Sources | CWIQ, HBS, HIES, ICP, IHS, LFS, LISD, LSMS, PS |
| Commentary on Data Sources | Data are based on primary household survey data obtained from government statistical agencies and World Bank country departments. Household survey data include the following: Core Welfare Indicator Questionnaire Survey 2010-2014. Expenditure survey/budget survey (ES/BS) 1999-2017. Income survey (IS) 2014-2017. Integrated household survey (IHS), 1992-2018. Labor force survey (LFS), 1999-2016. Living Standards Measurement Study Survey (LSMS), 1998-2017. Priority survey (PS), 1993 -2017. Data for high-income economies are from the Luxembourg Income Study database. |
| Organization Producing Indicator | World Bank |
| Organization(s) Using Indicator | WHO, World Bank, UNDATA, Global Development Policy Center, HDX, FAO |
| Organizational Uses of Indicator | Measures the depth of poverty as well as the incidence. |
| Government(s) Using Indicator | N/A |
| Governmental Uses of Indicator | N/A |
| Geographic Coverage (Number of Countries) | 165 |
| Earliest Year of Indicator | 1981 |
| Frequency of Indicator Production | Annually |
| Link | https://databank.worldbank.org/source/world-development-indicators |
| Ease of Calculation | High |
| Ease of Interpretation | Medium |
| Ease of Comparability | High |
| More than one deprivation | No |
| Reflects depth or intensity | Yes |
| Current Organizational Uptake | Low |

Table B16: Poverty gap (Mean monthly income below the national poverty line) (PG)

|  |
| --- |
| Poverty gap (Mean monthly income below the national poverty line) (PG) |
| World Bank Poverty and Equity Poverty Gap (national poverty line). |
| Indicator Type | Poverty |
| Methodology | Poverty gap at national poverty lines is the mean shortfall from the poverty lines (counting the nonpoor as having zero shortfall) as a percentage of the poverty lines. This measure reflects the depth of poverty as well as its incidence. National poverty lines are the benchmark for estimating poverty indicators that are consistent with the country’s specific economic and social circumstances. A national poverty line reflects local perceptions of the level and composition of welfare needed to be non-poor. A country may have a unique national poverty line or separate poverty lines for rural and urban areas, or for different geographic areas to capture differences in the cost of living or diets and consumption baskets. Welfare estimates such as consumption or income are derived from household survey data collected from nationally representative samples of households that make it possible to compute a comprehensive estimate of total household income or consumption, from which it is possible to construct a correctly weighted distribution of per capita welfare aggregates. Usually, national poverty lines in developing economies are anchored to the cost of a food bundle - based on the prevailing national diet of the poor - that provides adequate nutrition for good health and normal activity. National poverty lines are adjusted for inflation between survey years to allow comparisons of poverty over time. While poverty rates at national poverty lines should not be used for comparing poverty rates across countries, they are appropriate for guiding and monitoring the results of country-specific national poverty reduction strategies. |
| Formula | The poverty gap index (PGI) which adds up the extent to which individuals fall below the poverty line (PL), and expresses it as a percentage of the poverty line. First, the poverty gap (PGi) for poor individual i is defined as the following: PGi = (PL-Yi)\* I(Yi<PL). Here, I(.) is a indicator function that takes the value of 1 if the bracketed expression is true, and 0 otherwise. So if household per capita consumption/income a day (Yi) for household i is below the poverty line (PL), then I(.) equals 1 and each individual in household i would be counted as poor. This means that individuals who are above the poverty line will have a poverty gap (PG) equal to zero. Following, the poverty gap index (PGI) is calculated as following: PGI = 1/N \* ∑PGi/PL |
| Method of Aggregation | Simple average |
| Indicator Range | % (0-100) |
| Higher Poverty at Higher/Lower Value | Higher |
| Measured Poverty Component(s) | Consumption & Income |
| Proxy Components | N/A |
| Multidimensional | No |
| Indicator Disaggregation | None |
| Threshold vs. Poverty Line | Threshold: National; Poverty line: Relative |
| Count vs. Depth | Depth of Poverty |
| Data Sources | CWIQ, HBS, HIES, ICP, IHS, LFS, LISD, LSMS, PS |
| Commentary on Data Sources | Poverty estimates at national poverty lines are computed from household survey data collected from nationally representative samples of households. These data must contain sufficiently detailed information to compute a comprehensive estimate of total household income or consumption (including consumption or income from own production), from which it is possible to construct a correctly weighted distribution of per capita consumption or income. Household survey data include the following: Core Welfare Indicator Questionnaire Survey 2010-2014. Expenditure survey/budget survey (ES/BS) 1999-2017. Income survey (IS) 2014-2017. Integrated household survey (IHS), 1992-2018. Labor force survey (LFS), 1999-2016. Living Standards Measurement Study Survey (LSMS), 1998-2017. Priority survey (PS), 1993 -2017 |
| Organization Producing Indicator | World Bank |
| Organization(s) Using Indicator | World Bank, UNDATA, HDX, CEIC |
| Organizational Uses of Indicator | ODI: Uses this measure to reflect the depth and incidence of poverty. |
| Government(s) Using Indicator | N/A |
| Governmental Uses of Indicator | N/A |
| Geographic Coverage (Number of Countries) | 156 |
| Earliest Year of Indicator | 1985 |
| Frequency of Indicator Production | Annually |
| Link | https://databank.worldbank.org/source/world-development-indicators |
| Ease of Calculation | High |
| Ease of Interpretation | Medium |
| Ease of Comparability | Medium |
| More than one deprivation | No |
| Reflects depth or intensity | Yes |
| Current Organizational Uptake | Low |

Table B17: Poverty gap, Watt's Poverty Index (ln-transformed ratio of income to poverty line) (WPI)

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| --- |
| Poverty gap, Watt's Poverty Index (ln-transformed ratio of income to poverty line) (WPI) |
| World Bank - PovcalNet Squared Poverty gap |
| Indicator Type | Poverty |
| Methodology | The Watts Index is a distribution-sensitive poverty measure proposed by Watts in 1968. It is calculated as the following: N individuals in the population are indexed in ascending order of income/consumption, and the sum is taken over the q individuals whose income/consumption falls below the poverty line (i.e. $1.90 international poverty line). The Watts Index is computed by dividing the poverty line (PL) by income/consumption of each individual i (Yi), taking logs, and finding the average over the poor. In other words, the Watts Index is the mean across the population (N) of the proportionate poverty gaps, as measured by the log of the ratio of the poverty line (PL) to income (Yi), where the mean is formed over the whole population (N) – again, counting the non-poor as having a poverty gap equal to zero. |
| Formula | W = 1/N \* ∑[log(PL)-log(Yi)]\*I(Yi<PL) |
| Method of Aggregation | Weighted average |
| Indicator Range | [0;log(PL)] |
| Higher Poverty at Higher/Lower Value | Higher |
| Measured Poverty Component(s) | Consumption & Income |
| Proxy Components | N/A |
| Multidimensional | No |
| Indicator Disaggregation | None |
| Threshold vs. Poverty Line | Threshold: Global; Poverty line: Absolute |
| Count vs. Depth | Depth of Poverty |
| Data Sources | CWIQ, HBS, HIES, ICP, IHS, LFS, LISD, LSMS, PS |
| Commentary on Data Sources | Data are based on primary household survey data obtained from government statistical agencies and World Bank country departments. Household survey data include the following: Core Welfare Indicator Questionnaire Survey 2010-2014. Expenditure survey/budget survey (ES/BS) 1999-2017. Income survey (IS) 2014-2017. Integrated household survey (IHS), 1992-2018. Labor force survey (LFS), 1999-2016. Living Standards Measurement Study Survey (LSMS), 1998-2017. Priority survey (PS), 1993 -2017. Data for high-income economies are from the Luxembourg Income Study database. |
| Organization Producing Indicator | World Bank |
| Organization(s) Using Indicator | World Bank, ODI, UNICEF, FAO |
| Organizational Uses of Indicator | World Bank: Used as a tool for moderating the limitations of other more basic measures since it is a more sensitive indicator. Also, it is used because it is additively decomposable, is transfer sensitive, and satisfies the transfer principle. |
| Government(s) Using Indicator | N/A |
| Governmental Uses of Indicator | N/A |
| Geographic Coverage (Number of Countries) | 165 |
| Earliest Year of Indicator | 1981 |
| Frequency of Indicator Production | Annually |
| Link | http://iresearch.worldbank.org/PovcalNet/povDuplicateWB.aspx |
| Ease of Calculation | Low |
| Ease of Interpretation | Low |
| Ease of Comparability | High |
| More than one deprivation | No |
| Reflects depth or intensity | Yes |
| Current Organizational Uptake | Low |

Table B18: Poverty gap, weighted (Severity: non-linear squared) (SPG)

|  |
| --- |
| Poverty gap, weighted (Severity: non-linear squared) (SPG) |
| World Bank - PovcalNet Squared Poverty gap ($1.90/day). |
| Indicator Type | Poverty |
| Methodology | The squared poverty gap index (SPG) takes into account inequality among the poor. This is a weighted sum of poverty gaps (PGi) as a proportion of the poverty line (PL), where the weights are the proportionate poverty gaps (PGi) themselves - in contrast to the poverty gap index where each poverty gap (PGi) is weighted equally. Hence, the measure puts relatively more weight into individuals that fall far below the poverty line (PL). |
| Formula | The squared poverty gap index (SPG) is calculated as the following: SPG = 1/N \* ∑(PGi/PL)^2 Where N is the total number of the population, PGi is the poverty gap calculated for each individual i, and PL is the $1.90 international poverty line used. |
| Method of Aggregation | Weighted average |
| Indicator Range | % (0-100) |
| Higher Poverty at Higher/Lower Value | Higher |
| Measured Poverty Component(s) | Consumption & Income |
| Proxy Components | N/A |
| Multidimensional | No |
| Indicator Disaggregation | None |
| Threshold vs. Poverty Line | Threshold: Global; Poverty line: Absolute |
| Count vs. Depth | Depth of Poverty |
| Data Sources | CWIQ, HBS, HIES, ICP, IHS, LFS, LISD, LSMS, PS |
| Commentary on Data Sources | Data are based on primary household survey data obtained from government statistical agencies and World Bank country departments. Household survey data include the following: Core Welfare Indicator Questionnaire Survey 2010-2014. Expenditure survey/budget survey (ES/BS) 1999-2017. Income survey (IS) 2014-2017. Integrated household survey (IHS), 1992-2018. Labor force survey (LFS), 1999-2016. Living Standards Measurement Study Survey (LSMS), 1998-2017. Priority survey (PS), 1993 -2017. Data for high-income economies are from the Luxembourg Income Study database. |
| Organization Producing Indicator | World Bank |
| Organization(s) Using Indicator | World Bank, UNICEF, UNESCAP |
| Organizational Uses of Indicator | AFDB: It allows different weights to be put on the income (or expenditure) level of the poorest. |
| Government(s) Using Indicator | Bangladesh, Philippines, Sri Lanka, USA |
| Governmental Uses of Indicator | Bangladesh: More sensitive to income distribution among the poor and more sensitive to both depth and severity of poverty. United States: In June 2021, the World Bank estimated that 97 million more people were living in extreme poverty (defined as less than the U.S. $1.90 per day) in 2020, compared to the total number of extreme poor that was expected for 2020 if the pandemic had not occurred.  |
| Geographic Coverage (Number of Countries) | 165 |
| Earliest Year of Indicator | 1981 |
| Frequency of Indicator Production | Annually |
| Link | http://iresearch.worldbank.org/PovcalNet/povDuplicateWB.aspx |
| Ease of Calculation | Low |
| Ease of Interpretation | Low |
| Ease of Comparability | High |
| More than one deprivation | No |
| Reflects depth or intensity | Yes |
| Current Organizational Uptake | Low |

Table B19: Poverty line: headcount ratio at $1.90 a day (% of population) (PL)

|  |
| --- |
| Poverty line: headcount ratio at $1.90 a day (% of population) (PL) |
| World Bank World Development Indicator poverty line ($1.90/day) - rate/ratio. |
| Indicator Type | Poverty |
| Methodology | The World Bank aims to apply a common standard in measuring extreme poverty using what poverty means in the world’s poorest countries. The welfare of people living in different countries can be measured on a common scale by adjusting for differences in the purchasing power of currencies. Early editions of World Development Indicators used PPPs from the Penn World Tables to convert values in local currency to equivalent purchasing power measured in U.S dollars. Later editions used 1993, 2005, and 2011 consumption PPP estimates produced by the World Bank. The current extreme poverty line is set at $1.90 a day in 2011 PPP terms, which represents the mean of the poverty lines found in 15 of the poorest countries ranked by per capita consumption. The new poverty line maintains the same standard for extreme poverty - the poverty line typical of the poorest countries in the world - but updates it using the latest information on the cost of living in developing countries. The statistics reported here are based on consumption data or, when unavailable, on income surveys. Analysis of some 20 countries for which income and consumption expenditure data were both available from the same surveys found income to yield a higher mean than consumption but also higher inequality. When poverty measures based on consumption and income were compared, the two effects roughly cancelled each other out: there was no significant statistical difference. |
| Formula | Pt = NPt/N Pt represents the headcount ratio at $1.90 a day (% of the population), NPt represent the number of individuals living below the poverty line, and N represent the total population. Similarly, you can write the indicator as the following: Pt = 1/N \* ∑ I(Yi<IPL) Here, I(.) is a indicator function that takes the value of 1 if the bracketed expression is true, and 0 otherwise. So if household per capita consumption/income a day (Yi) for household i is below the international poverty line (IPL), then I(.) equals 1 and each individual in household i would be counted as poor. |
| Method of Aggregation | Simple average |
| Indicator Range | % (0-100) |
| Higher Poverty at Higher/Lower Value | Higher |
| Measured Poverty Component(s) | Consumption & Income |
| Proxy Components | N/A |
| Multidimensional | No |
| Indicator Disaggregation | Gender, Age, Rural/Urban |
| Threshold vs. Poverty Line | Threshold: Global; Poverty line: Absolute |
| Count vs. Depth | Count |
| Data Sources | CWIQ, HBS, HIES, ICP, IHS, LFS, LISD, LSMS, PS |
| Commentary on Data Sources | Data are based on primary household survey data obtained from government statistical agencies and World Bank country departments. Household survey data include the following: Core Welfare Indicator Questionnaire Survey 2010-2014. Expenditure survey/budget survey (ES/BS) 1999-2017. Income survey (IS) 2014-2017. Integrated household survey (IHS), 1992-2018. Labor force survey (LFS), 1999-2016. Living Standards Measurement Study Survey (LSMS), 1998-2017. Priority survey (PS), 1993 -2017. Data for high-income economies are from the Luxembourg Income Study database. |
| Organization Producing Indicator | World Bank |
| Organization(s) Using Indicator | World Bank, CIESIN, AFDB, USDA, ADB |
| Organizational Uses of Indicator | As a well established indicator, it is used by organizations and governments globally to monitor changes in extreme poverty. |
| Government(s) Using Indicator | Ethiopia, Bangladesh, South Africa, Nigeria, USA |
| Governmental Uses of Indicator | Bangladesh: Widely used measure to track progress on poverty eradication, Ethiopia: To understand the factors that lead to food insecurity and households vulnerability. |
| Geographic Coverage (Number of Countries) | 165 |
| Earliest Year of Indicator | 1981 |
| Frequency of Indicator Production | Annually |
| Link | https://databank.worldbank.org/source/world-development-indicators#advancedDownloadOptions |
| Ease of Calculation | High |
| Ease of Interpretation | High |
| Ease of Comparability | High |
| More than one deprivation | No |
| Reflects depth or intensity | No |
| Current Organizational Uptake | High |

Table B20: Poverty line: Number of poor at international poverty line $1.90 a day (2011 PPP) (PL)

|  |
| --- |
| Poverty line: Number of poor at international poverty line $1.90 a day (2011 PPP) (PL) |
| World Bank Poverty and Equity poverty line ($1.90/day) count. |
| Indicator Type | Poverty |
| Methodology | Number of people, in millions, living on less than $1.90 a day at 2011 PPP is calculated by multiplying the poverty rate and the population (The poverty headcount ratio is also included in this portfolio analysis). The World Bank aims to apply a common standard in measuring extreme poverty using what poverty means in the world’s poorest countries. The welfare of people living in different countries can be measured on a common scale by adjusting for differences in the purchasing power of currencies. Early editions of World Development Indicators used PPPs from the Penn World Tables to convert values in local currency to equivalent purchasing power measured in U.S dollars. Later editions used 1993, 2005, and 2011 consumption PPP estimates produced by the World Bank. The current extreme poverty line is set at $1.90 a day in 2011 PPP terms, which represents the mean of the poverty lines found in 15 of the poorest countries ranked by per capita consumption. The new poverty line maintains the same standard for extreme poverty - the poverty line typical of the poorest countries in the world - but updates it using the latest information on the cost of living in developing countries. The statistics reported here are based on consumption data or, when unavailable, on income surveys. Analysis of some 20 countries for which income and consumption expenditure data were both available from the same surveys found income to yield a higher mean than consumption but also higher inequality. When poverty measures based on consumption and income were compared, the two effects roughly cancelled each other out: there was no significant statistical difference. |
| Formula | Np = 1/N \* ∑ I(Yi<IPL) Here, I(.) is a indicator function that takes the value of 1 if the bracketed expression is true, and 0 otherwise. So if household per capita consumption/income a day (Yi) for household i is below the international poverty line (IPL), then I(.) equals 1 and each individual in household i would be counted as poor. NPt is the total number of poor at point t in time. |
| Method of Aggregation | Linear aggregation |
| Indicator Range | Millions of people |
| Higher Poverty at Higher/Lower Value | Higher |
| Measured Poverty Component(s) | Consumption & Income |
| Proxy Components | N/A |
| Multidimensional | No |
| Indicator Disaggregation | None |
| Threshold vs. Poverty Line | Threshold: Global; Poverty line: Absolute |
| Count vs. Depth | Count |
| Data Sources | CWIQ, HBS, HIES, ICP, IHS, LFS, LISD, LSMS, PS |
| Commentary on Data Sources | Data are based on primary household survey data obtained from government statistical agencies and World Bank country departments. Household survey data include the following: Core Welfare Indicator Questionnaire Survey 2010-2014. Expenditure survey/budget survey (ES/BS) 1999-2017. Income survey (IS) 2014-2017. Integrated household survey (IHS), 1992-2018. Labor force survey (LFS), 1999-2016. Living Standards Measurement Study Survey (LSMS), 1998-2017. Priority survey (PS), 1993 -2017. Data for high-income economies are from the Luxembourg Income Study database. |
| Organization Producing Indicator | World Bank |
| Organization(s) Using Indicator | World Bank, WHO, Gates Foundation, Development Initiatives, World Vision International, Concern Worldwide, Resource Watch, ILO, CARE, USAID, UNICEF, UNDP, IFAD, FAO, WFP, PAHO |
| Organizational Uses of Indicator | Use of World Bank's international poverty line as a benchmark for monitoring broader progress (USAID) |
| Government(s) Using Indicator | UK, Ethiopia |
| Governmental Uses of Indicator | Govt of UK: Forecast and comparison with other countries. United States: poverty measures for developing countries measured against the revised international poverty line of $1.90 |
| Geographic Coverage (Number of Countries) | 165 |
| Earliest Year of Indicator | 1981 |
| Frequency of Indicator Production | Annually |
| Link | Poverty and Equity Database https://povertydata.worldbank.org/Poverty/home |
| Ease of Calculation | High |
| Ease of Interpretation | Medium |
| Ease of Comparability | High |
| More than one deprivation | No |
| Reflects depth or intensity | No |
| Current Organizational Uptake | Medium |

Table B21: Poverty line: Number of poor at international poverty line $3.20 a day (2011 PPP) (PL)

|  |
| --- |
| Poverty line: Number of poor at international poverty line $3.20 a day (2011 PPP) (PL) |
| World Bank Poverty and Equity poverty line ($3.2/day) count. |
| Indicator Type | Poverty |
| Methodology | The US$3.20 per person poverty line is derived as the median implicit national poverty line corresponding to lower-middle income countries. First, each household survey reports welfare aggregates in local currency, which are adjusted for price differences within countries over time using the local consumer price index (CPI) and for price differences across countries using purchasing power parities (PPPs). Household surveys measure either consumption or income, in the current 2017 estimates about 60 percent of economies use consumption, with the rest using income. This difference in welfare aggregates affects the comparison of trends and levels of poverty. For example, most poverty estimates for Latin American and the Caribbean use income as welfare measurement, while East Asia and Pacific use consumption, making it difficult to compare trends across these regions. Usually, economies choose the concept that can be more accurately measured and more relevant to the country's context. Consumption measures require a wide range of questions making them more time-consuming but are more directly connected to economic welfare. While income measures are difficult to estimate when a large proportion of the population works in the informal sector or is self-employed – usually the case for poorer economies, opting to use consumption -. Also, income measurement has higher variability than consumption over time, especially against negative shocks. This means that when income measurement is used, you can expect higher poverty rates than if you were to use consumption measures. When both welfare estimates are available for a specific country, consumption is preferred over income since the focus is to measure extreme poverty. Finally, the indicator expresses estimates on household welfare per capita to measure poverty, and the international poverty line is expressed in per capita terms. Currently, this indicator does not capture differences in the distribution of welfare within the household, which is relevant to understanding the drivers of poverty by gender, age, or economic activity. |
| Formula | Np = 1/N \* ∑ I(Yi<IPL) Here, I(.) is a indicator function that takes the value of 1 if the bracketed expression is true, and 0 otherwise. So if household per capita consumption/income a day (Yi) for household i is below the international poverty line (IPL), then I(.) equals 1 and each individual in household i would be counted as poor. NPt is the total number of poor at point t in time. |
| Method of Aggregation | Linear aggregation |
| Indicator Range | Millions of people |
| Higher Poverty at Higher/Lower Value | Higher |
| Measured Poverty Component(s) | Consumption & Income |
| Proxy Components | N/A |
| Multidimensional | No |
| Indicator Disaggregation | None |
| Threshold vs. Poverty Line | Threshold: Global; Poverty line: Absolute |
| Count vs. Depth | Count |
| Data Sources | CWIQ, HBS, HIES, ICP, IHS, LFS, LISD, LSMS, PS |
| Commentary on Data Sources | Data are based on primary household survey data obtained from government statistical agencies and World Bank country departments. Household survey data include the following: Core Welfare Indicator Questionnaire Survey 2010-2014. Expenditure survey/budget survey (ES/BS) 1999-2017. Income survey (IS) 2014-2017. Integrated household survey (IHS), 1992-2018. Labor force survey (LFS), 1999-2016. Living Standards Measurement Study Survey (LSMS), 1998-2017. Priority survey (PS), 1993 -2017. Data for high-income economies are from the Luxembourg Income Study database. |
| Organization Producing Indicator | World Bank |
| Organization(s) Using Indicator | Gates Foundation, ILO, WHO, Escap, UNDP, World Bank, IFAD, UNICEF |
| Organizational Uses of Indicator | OECD: To identify the major problems arising during the academic research of poverty. UNDP: To estimate the global impact of income support during the pandemic. |
| Government(s) Using Indicator | UK, USA |
| Governmental Uses of Indicator | Ethiopia's poverty headcount at $ 3.20 a day was mentioned in the factsheet prepared by Gov of UK. |
| Geographic Coverage (Number of Countries) | 165 |
| Earliest Year of Indicator | 1981 |
| Frequency of Indicator Production | Annually |
| Link | https://databank.worldbank.org/source/poverty-and-equity#advancedDownloadOptions |
| Ease of Calculation | High |
| Ease of Interpretation | Medium |
| Ease of Comparability | High |
| More than one deprivation | No |
| Reflects depth or intensity | No |
| Current Organizational Uptake | High |

Table B22: Poverty line: Number of poor at international poverty line $5.50 a day (2011 PPP) (PL)

|  |
| --- |
| Poverty line: Number of poor at international poverty line $5.50 a day (2011 PPP) (PL) |
| World Bank Poverty and Equity poverty line ($5.5/day) count. |
| Indicator Type | Poverty |
| Methodology | The US$5.50 per person poverty line is derived as the median implicit national poverty line corresponding to upper-middle income countries. First, each household survey reports welfare aggregates in local currency, which are adjusted for price differences within countries over time using the local consumer price index (CPI) and for price differences across countries using purchasing power parities (PPPs). Household surveys measure either consumption or income, in the current 2017 estimates about 60 percent of economies use consumption, with the rest using income. This difference in welfare aggregates affects the comparison of trends and levels of poverty. For example, most poverty estimates for Latin American and the Caribbean use income as welfare measurement, while East Asia and Pacific use consumption, making it difficult to compare trends across these regions. Usually, economies choose the concept that can be more accurately measured and more relevant to the country's context. Consumption measures require a wide range of questions making them more time-consuming but are more directly connected to economic welfare. While income measures are difficult to estimate when a large proportion of the population works in the informal sector or is self-employed – usually the case for poorer economies, opting to use consumption -. Also, income measurement has higher variability than consumption over time, especially against negative shocks. This means that when income measurement is used, you can expect higher poverty rates than if you were to use consumption measures. When both welfare estimates are available for a specific country, consumption is preferred over income since the focus is to measure extreme poverty. Finally, the indicator expresses estimates on household welfare per capita to measure poverty, and the international poverty line is expressed in per capita terms. Currently, this indicator does not capture differences in the distribution of welfare within the household, which is relevant to understanding the drivers of poverty by gender, age, or economic activity. |
| Formula | Np = 1/N \* ∑ I(Yi<IPL) Here, I(.) is a indicator function that takes the value of 1 if the bracketed expression is true, and 0 otherwise. So if household per capita consumption/income a day (Yi) for household i is below the international poverty line (IPL), then I(.) equals 1 and each individual in household i would be counted as poor. NPt is the total number of poor at point t in time. |
| Method of Aggregation | Linear aggregation |
| Indicator Range | Millions of people |
| Higher Poverty at Higher/Lower Value | Higher |
| Measured Poverty Component(s) | Consumption & Income |
| Proxy Components | N/A |
| Multidimensional | No |
| Indicator Disaggregation | None |
| Threshold vs. Poverty Line | Threshold: Global; Poverty line: Absolute |
| Count vs. Depth | Count |
| Data Sources | CWIQ, HBS, HIES, ICP, IHS, LFS, LISD, LSMS, PS |
| Commentary on Data Sources | Data are based on primary household survey data obtained from government statistical agencies and World Bank country departments. Household survey data include the following: Core Welfare Indicator Questionnaire Survey 2010-2014. Expenditure survey/budget survey (ES/BS) 1999-2017. Income survey (IS) 2014-2017. Integrated household survey (IHS), 1992-2018. Labor force survey (LFS), 1999-2016. Living Standards Measurement Study Survey (LSMS), 1998-2017. Priority survey (PS), 1993 -2017. Data for high-income economies are from the Luxembourg Income Study database. |
| Organization Producing Indicator | World Bank |
| Organization(s) Using Indicator | Gates Foundation, WHO, IFAD, Escap, UNDP, WHO, UNICEF, World Bank |
| Organizational Uses of Indicator | UNDP: To estimate the global impact of income support during the pandemic. |
| Government(s) Using Indicator | N/A |
| Governmental Uses of Indicator | N/A |
| Geographic Coverage (Number of Countries) | 165 |
| Earliest Year of Indicator | 1981 |
| Frequency of Indicator Production | Annually |
| Link | https://databank.worldbank.org/source/poverty-and-equity#advancedDownloadOptions |
| Ease of Calculation | High |
| Ease of Interpretation | Medium |
| Ease of Comparability | High |
| More than one deprivation | No |
| Reflects depth or intensity | No |
| Current Organizational Uptake | Medium |

Table B23: Poverty line: Poverty headcount ratio at national poverty lines (% of population) (PL)

|  |
| --- |
| Poverty line: Poverty headcount ratio at national poverty lines (% of population) (PL) |
| World Bank Poverty and Equity national poverty line rate/ratio. |
| Indicator Type | Poverty |
| Methodology | National poverty lines are the benchmark for estimating poverty indicators that are consistent with the country’s specific economic and social circumstances. A national poverty line reflects local perceptions of the level and composition of welfare needed to be non-poor. A country may have a unique national poverty line or separate poverty lines for rural and urban areas, or for different geographic areas to capture differences in the cost of living or diets and consumption baskets. Welfare estimates such as consumption or income are derived from household survey data collected from nationally representative samples of households that make it possible to compute a comprehensive estimate of total household income or consumption, from which it is possible to construct a correctly weighted distribution of per capita welfare aggregates. Usually, national poverty lines in developing economies are anchored to the cost of a food bundle - based on the prevailing national diet of the poor - that provides adequate nutrition for good health and normal activity. National poverty lines are adjusted for inflation between survey years to allow comparisons of poverty over time. While poverty rates at national poverty lines should not be used for comparing poverty rates across countries, they are appropriate for guiding and monitoring the results of country-specific national poverty reduction strategies |
| Formula | Pt = NPt/N Pt represents the poverty headcount ratio at national poverty line (% of the population), NPt represent the number of individuals living below the poverty line, and N represent the total population. Similarly, you can write the indicator as the following: Pt = 1/N \* ∑ I(Yi<NPL) Here, I(.) is a indicator function that takes the value of 1 if the bracketed expression is true, and 0 otherwise. So if household per capita consumption/income a day (Yi) for household i is below the national poverty line (NPL), then I(.) equals 1 and each individual in household i would be counted as poor. |
| Method of Aggregation | Simple average |
| Indicator Range | % (0-100) |
| Higher Poverty at Higher/Lower Value | Higher |
| Measured Poverty Component(s) | Consumption & Income |
| Proxy Components | N/A |
| Multidimensional | No |
| Indicator Disaggregation | None |
| Threshold vs. Poverty Line | Threshold: National; Poverty line: Relative |
| Count vs. Depth | Count |
| Data Sources | CWIQ, HBS, HIES, ICP, IHS, LFS, LISD, LSMS, PS |
| Commentary on Data Sources | Poverty estimates at national poverty lines are computed from household survey data collected from nationally representative samples of households. These data must contain sufficiently detailed information to compute a comprehensive estimate of total household income or consumption (including consumption or income from own production), from which it is possible to construct a correctly weighted distribution of per capita consumption or income. Household survey data include the following: Core Welfare Indicator Questionnaire Survey 2010-2014. Expenditure survey/budget survey (ES/BS) 1999-2017. Income survey (IS) 2014-2017. Integrated household survey (IHS), 1992-2018. Labor force survey (LFS), 1999-2016. Living Standards Measurement Study Survey (LSMS), 1998-2017. Priority survey (PS), 1993 -2017 |
| Organization Producing Indicator | World Bank |
| Organization(s) Using Indicator | IFAD, Escap, UNDP, World Bank, UNICEF |
| Organizational Uses of Indicator | USAID: National poverty lines used by governments to measure the incidence and severity of poverty among the population and to track progress in reducing poverty. UNDP: to estimate the global impact of income support during the pandemic. |
| Government(s) Using Indicator | Bangladesh, India, South Africa, Nigeria, Ethiopia, USA |
| Governmental Uses of Indicator | India: Performance of states and union territories on Indicators of SDG1. South Africa: to report poverty levels and patterns, as well as the planning, monitoring, and evaluation of poverty reduction programs and policies. Ethiopia: To understand the factors that lead to food insecurity and household vulnerability |
| Geographic Coverage (Number of Countries) | 156 |
| Earliest Year of Indicator | 1985 |
| Frequency of Indicator Production | Annually |
| Link | https://databank.worldbank.org/source/poverty-and-equity#advancedDownloadOptions |
| Ease of Calculation | High |
| Ease of Interpretation | High |
| Ease of Comparability | Medium |
| More than one deprivation | No |
| Reflects depth or intensity | No |
| Current Organizational Uptake | High |

Table B24: Poverty Probability Index (PPI)

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| --- |
| Poverty Probability Index (PPI) |
| Likelihood of being below a given poverty line (ex. national, $1.90/day) based on responses to 10-question standardized survey. |
| Indicator Type | Poverty |
| Methodology | There are two steps to using the PPI to determine a person’s level of poverty. 1. The survey and score: The PPI survey contains 10 verifiable questions that a field agent can ask their clients in 5 to 10 minutes. The questions are simple – “What material is your roof made out of? How many of your children are in school?” The survey respondent chooses an answer from multiple choices. It is important that the PPI administrator ask and interpret the survey questions consistently across all clients and as directed by the PPI guidelines in order to maintain accuracy. For many PPIs, there is a corresponding document that provides guidance on how to interpret a question in complicated situations. Each answer is given a value, and the total value of all the answers is the survey respondent’s PPI score. 2. Poverty likelihood look-up table: The PPI administrator uses the PPI look-up table to convert the PPI score to a likelihood that the respondent’s household is living below a poverty line. The look-up table allows the PPI administrator to determine the household’s likelihood of living below multiple national and international poverty lines. |
| Formula | Once a PPI survey has been completed for a household, the poverty likelihood of that household can be calculated by summing the score [between 0 and 100] and using the Look-Up Table to convert the score to a poverty likelihood [%] related to a poverty line [e.g., national poverty line or $1.90/day]. Once individual household poverty likelihoods have been calculated, organizations can average these poverty likelihoods for the group of clients surveyed to determine the poverty rate of their portfolio, or the percentage of their clients who live below a specific poverty line. |
| Method of Aggregation | Multistep process which combines linear aggregation and probability prediction process. |
| Indicator Range | % (0-100) |
| Higher Poverty at Higher/Lower Value | Higher |
| Measured Poverty Component(s) | Proxy |
| Proxy Components | Access to Economic Opportunities, Assets |
| Multidimensional | Yes |
| Indicator Disaggregation | None |
| Threshold vs. Poverty Line | Threshold: National; Poverty line: Relative |
| Count vs. Depth | Count |
| Data Sources | PPIS |
| Commentary on Data Sources | PPI Survey |
| Organization Producing Indicator | Innovations for Poverty Action |
| Organization(s) Using Indicator | UNDP, USAID, Metadata-UN, WHO, FAO, PAHO, UNICEF, IFAD, WFP, World Bank |
| Organizational Uses of Indicator | Grameen Foundation: Simplicity and ease of use. |
| Government(s) Using Indicator | Bangladesh (Grameen Foundation) |
| Governmental Uses of Indicator | N/A |
| Geographic Coverage (Number of Countries) | 49 |
| Earliest Year of Indicator | 2005 |
| Frequency of Indicator Production | As survey data becomes available |
| Link | https://www.povertyindex.org/ |
| Ease of Calculation | Medium |
| Ease of Interpretation | Medium |
| Ease of Comparability | Low |
| More than one deprivation | Yes |
| Reflects depth or intensity | No |
| Current Organizational Uptake | Low |

Table B25: Revised Arab Multidimensional Poverty Index (Arab MPI)

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| --- |
| Revised Arab Multidimensional Poverty Index (Arab MPI) |
| Similar to the global MPI but revises the cut-off thresholds and modifies the input indicators. Emphasizes household and child poverty. |
| Indicator Type | Poverty |
| Methodology | The regional (Arab) Multidimensional Poverty Index (MPI) identifies multiple deprivations at the household level in health (i.e. nutrition, child mortality), education (i.e. years of schooling, school attendance) and standard of living (i.e. cooking fuel, sanitation, drinking water, electricity, housing, assets, no overcrowding, mobility, and livelihood). Each of these indicators has two associated deprivation cut-offs. One reflects the deprivation of acute poverty which is similar (but not identical) to the global MPI and the other, a higher cut-off denoting a slightly higher standard, required to measure poverty which is inclusive of acute poverty. While the cut offs usually vary across indicators for acute poverty and poverty, in case of the aggregate score for identifying a poor household, the cut off is the same. A household is considered acutely poor or poor if its total level of deprivation (total of weighted deprivations in all indicators) is higher than one-third of the total possible deprivation. In order to take into account the specific conditions of Arab countries, the Report makes a departure from the global MPI by adding two indicators, one pertaining to 'FGM combined with early pregnancy' and the second regarding: 'overcrowding'. Each person is assigned a deprivation score according to his or her household’s deprivations in each of the 12 indicators. The maximum deprivation score is 100 percent, with each dimension equally weight- ed; thus, the maximum deprivation score in each dimension is 33.3 percent or, more accurately, 1/3. The health dimension have 2 indicators, so each indicator is weighted as 1/6. The education dimension has three indicators, so each indicator is weighted as 1/9. The standard of living dimension has seven indicators, so each indicator is weighted as 1/21. To identify multidimensionally poor people, the deprivation scores for each indicator are summed to obtain the household deprivation score. A cutoff of 1/3 is used to distinguish between poor and nonpoor people. If the deprivation score is 1/3 or higher, that household (and everyone in it) is considered multi- dimensionally poor. People with a deprivation score of 1/5 or higher but less than 1/3 are vulnerable to multidimensional poverty. People with a deprivation score of 1/2 or higher are in severe multidimensional poverty. The headcount ratio, H, or incidence of multidimensional poverty is the proportion of multidimensionally poor people in the population: H = q/n where q is the number of people who are multidimensionally poor and n is the total population. The intensity of poverty, A, reflects the average proportion of the weighted component indicators in which multidimensionally poor people are deprived. For multidimensionally poor people only (those with a deprivation score greater than or equal to 33.3 percent), the deprivation scores are summed and divided by the total number of multidimensionally poor people: A = ∑1qsi /q Where si is the deprivation score that the ith multidimensionally poor person experiences. The deprivation score si of the ith multidimensionally poor person can be expressed as the sum of the weights associated with each indicator j ( j = 1, 2, ..., 10) in which person i is deprived, si = ci1 + ci2 + ... + ci10. The MPI value is the product of two measures: the incidence of multidimensional poverty and the intensity of poverty: MPI = H\*A |
| Formula | 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 weighted deprivation score is equal to or higher than the poverty cutoff of 33.33%. After the poverty identification step, we aggregate across individuals to obtain the incidence of poverty or headcount ratio (H) which represents the proportion of poor people. We then compute the intensity of poverty (A), representing the average number of weighted deprivations experienced by the poor. We then compute the adjusted poverty headcount ratio (M0) or MPI by combining H and A in a multiplicative form (MPI = H x A). |
| Method of Aggregation | Multistep process which combines a weighted average (A) and a linear aggregation (H) |
| Indicator Range | [0;1] |
| Higher Poverty at Higher/Lower Value | Higher |
| Measured Poverty Component(s) | Proxy |
| Proxy Components | Assets, Food Security |
| Multidimensional | Yes |
| Indicator Disaggregation | Gender, Age |
| Threshold vs. Poverty Line | Threshold: Other |
| Count vs. Depth | Both |
| Data Sources | DHS, MICS, PAPFAM |
| Commentary on Data Sources | The DHS, the MICS, and the Arab Family Health Project (PAPFAM). Additionally, national surveys were used. |
| Organization Producing Indicator | United Nations Economic and Social Commission for Western Asia |
| Organization(s) Using Indicator | Innovations for Poverty Action (IPA), Center for Agriculture and Rural Development (CARD), Grameen Foundation, GO Lab, FSD Africa, Vision Fund, Opportunity International |
| Organizational Uses of Indicator | UNESCWA: To provide practical proposals to support Arab efforts to eradicate poverty in all its dimensions and implement the 2030 Agenda. |
| Government(s) Using Indicator | N/A |
| Governmental Uses of Indicator | N/A |
| Geographic Coverage (Number of Countries) | 10 (11 including Palestine in the child poverty measure) |
| Earliest Year of Indicator | 2017 |
| Frequency of Indicator Production | Annually |
| Link | https://mppn.org/the-revised-arab-mpi-multidimensional-poverty-index-for-arab-countries/ |
| Ease of Calculation | Low |
| Ease of Interpretation | Low |
| Ease of Comparability | High |
| More than one deprivation | Yes |
| Reflects depth or intensity | Yes |
| Current Organizational Uptake | Medium |

Table B26: Self-Sufficiency Standard (SSS)

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| Self-Sufficiency Standard (SSS) |
| The Self-Sufficiency Standard is the amount needed to meet each basic need at a minimally adequate level, without public or private assistance. It aggregates the cost of housing, childcare, food, transportation, health care, miscellaneous items, and taxes/taxes credits. |
| Indicator Type | Poverty |
| Methodology | The Self-Sufficiency Standard calculates the cost of housing, childcare, food, transportation, health care, miscellaneous items, and taxes/taxes credits. First, the basic costs for each family type (which vary by number and age of children, and by number of adults) are added in each county. Ten percent of this total is added for miscellaneous costs. Finally, taxes and tax credits are calculated using formulas that calculate the state and federal income and payroll taxes as well as sales tax (where applicable). |
| Formula | First, the basic costs for each family type (which vary by number and age of children, and by number of adults) are added in each county. Ten percent of this total is added for miscellaneous costs. Finally, taxes and tax credits are calculated using formulas that calculate the state and federal income and payroll taxes as well as sales tax (where applicable). The goal for creating the Self-Sufficiency Standard is to calculate the amount needed to meet each basic need at a minimally adequate level, without public or private assistance, and to do so in a way that makes the Standard as consistent and accurate as possible. In general, data for each budget category comes from scholarly or credible sources, such as the U.S. Census Bureau; are updated annually; and are age- and geographically-specific, as appropriate. Whenever available, the Standard uses government-calculated numbers of what is minimally adequate, such as the USDA food budgets based on nutrition requirements or HUD’s Fair Market Rents for housing assistance. |
| Method of Aggregation | Linear aggregation |
| Indicator Range | $ |
| Higher Poverty at Higher/Lower Value | Lower/Other: this is a standard of the amount of income needed for working families to meet basic needs at a minimally adequate level |
| Measured Poverty Component(s) | Proxy |
| Proxy Components | Access to Economic Opportunities, Assets, Food Security |
| Multidimensional | Yes |
| Indicator Disaggregation | Age |
| Threshold vs. Poverty Line | Threshold: Other; Poverty line: Relative |
| Count vs. Depth | Both |
| Data Sources | CEN |
| Commentary on Data Sources | In general, for each category, data comes from scholarly or credible sources, such as the U.S. Census Bureau; are updated annually; and are age- and geographically-specific, as appropriate. Whenever available, the Standard uses government-calculated numbers of what is minimally adequate, such as the USDA food budgets based on nutrition requirements, or HUD’s Fair Market Rents for housing assistance. |
| Organization Producing Indicator | University of Washington School of Social Work, Center for Women’s Welfare |
| Organization(s) Using Indicator | UN\_escwa, OPHI, UNICEF, UNDP, FAO, WFP |
| Organizational Uses of Indicator | CWW: Used to define the real cost of living for working families at a minimally adequate level. The standard is used as an alternative to other official poverty measures. |
| Government(s) Using Indicator | N/A |
| Governmental Uses of Indicator | N/A |
| Geographic Coverage (Number of Countries) | 1 |
| Earliest Year of Indicator | 2001 |
| Frequency of Indicator Production | ~3 years |
| Link | https://www.selfsufficiencystandard.org/ |
| Ease of Calculation | High |
| Ease of Interpretation | Low |
| Ease of Comparability | Medium |
| More than one deprivation | Yes |
| Reflects depth or intensity | Yes |
| Current Organizational Uptake | Low |

Table B27: Societal poverty line headcount ratio (% of population)

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| Societal poverty line headcount ratio (% of population) |
| World Bank PovcalNet Societal Poverty Line ratio |
| Indicator Type | Poverty |
| Methodology | The SPL was introduced in 2017 to complement the international poverty line of US$1.90 a day to reflect how the monetary definition of poverty at the national level vary as societies become richer over time. The introduction of this measure was recommended by the Commission on Global Poverty to “introduce a societal head count measure of global consumption poverty that takes account, above an appropriate level, of the standard of living in the country in question, thus combining fixed and relative elements of poverty”. The guiding principle of the IPL fixing the purchasing power of the IPL over time and across countries ensures that the material well-being of people can be assessed and compared meaningfully across the world. Although, this is relevant for goal related purposes, there are trade-offs in making this choice. For example, fixing the value of the line in constant PPP terms across all countries ensures that the bundle of goods that can be purchased is the same. As economies grow this bundle becomes less useful indicator of basic needs, making the social relevance of the IPL lessened over time in those places considering that needs change as countries become richer. Additionally, uniformity in the consumption bundle may not result in the same level of well-being across countries. Fixing the consumption bundle could result in unequal assessment of people across the world in terms of their ability to function in society in a socially acceptable manner such as participating in the labor market might require more goods in a richer country. Also, participation in society with dignity might require more goods in richer countries than in a poor country. This conceptual point is empirically supported, since there is significant variation across countries in how basic needs are defined using national poverty lines in which there is a strong positive correlation between the median level of consumption in each country and the assessment of basic needs. In other words, absolute national poverty lines are behaving like relative poverty lines since they become higher as economies grow over time. This said, the SPL is based on a poverty line that is adjusted for the median level of well-being in each country (consumption/income). Here, individuals living in extreme poverty as measured by the IPL will also be suffering from societal poverty. But, the SPL will also consider individuals suffering from societal poverty if they are living on less than US$1.00 + half of the value of the median consumption per day in that country. The equation to define the SPL for each country calculated using 2011 PPP U.S dollars is as follows: SPL = max (US$1.90, US$1.00+ 0.5 \* median consumption). This equation was constructed using the empirical association between national poverty lines and median consumption found using 699 national poverty lines for different countries over time, in which the equation most closely fits the values in the data. In addition to fitting the data well, the slope coefficient of 0.5 is widely used by many countries and organizations as a measure of relative poverty and inclusion (e.g., the SDG indicator 10.2.1 on inequality). |
| Formula | Pt = NPt/N Pt represents the headcount ratio at the Societal poverty line for each country (% of the population), NPt represent the number of individuals living below the societal poverty line, and N represent the total population. Similarly, you can write the indicator as the following: Pt = 1/N \* ∑ I(Yi<SPL) Here, I(.) is a indicator function that takes the value of 1 if the bracketed expression is true, and 0 otherwise. So if household per capita consumption/income a day (Yi) for household i is below the societal poverty line (SPL), then I(.) equals 1 and each individual in household i would be counted as poor. The SPL is calculated as follows for each country c at time t: SPL = max(US$1.90, US$1.00 + 0.5 x median consumption for country c at time t) |
| Method of Aggregation | Simple average |
| Indicator Range | % (0-100) |
| Higher Poverty at Higher/Lower Value | Higher |
| Measured Poverty Component(s) | Consumption & Income |
| Proxy Components | N/A |
| Multidimensional | No |
| Indicator Disaggregation | None |
| Threshold vs. Poverty Line | Threshold: Other; Poverty line: Other |
| Count vs. Depth | Count |
| Data Sources | CWIQ, HBS, HIES, ICP, IHS, LFS, LISD, LSMS, PS |
| Commentary on Data Sources | Data are based on primary household survey data obtained from government statistical agencies and World Bank country departments. Household survey data include the following: Core Welfare Indicator Questionnaire Survey 2010-2014. Expenditure survey/budget survey (ES/BS) 1999-2017. Income survey (IS) 2014-2017. Integrated household survey (IHS), 1992-2018. Labor force survey (LFS), 1999-2016. Living Standards Measurement Study Survey (LSMS), 1998-2017. Priority survey (PS), 1993 -2017. Data for high-income economies are from the Luxembourg Income Study database. |
| Organization Producing Indicator | World Bank |
| Organization(s) Using Indicator | World Bank, ILO |
| Organizational Uses of Indicator | World Bank: The SPL essentially reflects typical assessments of basic needs for countries at different levels of economic development. World Bank: this new measure also defines someone as suffering from societal poverty if they live on less than $1 plus half of what the median person in their country consumes. As countries get richer and median consumption levels increase, the societal poverty line (SPL) increases in value. For example, in a country where the median level of consumption per person is $3.00 per day, the SPL is $2.50, ($1 + 0.5\*$3.00). |
| Government(s) Using Indicator | N/A |
| Governmental Uses of Indicator | N/A |
| Geographic Coverage (Number of Countries) | 165 |
| Earliest Year of Indicator | 1990 |
| Frequency of Indicator Production | Annually |
| Link | https://www.worldbank.org/en/publication/poverty-and-shared-prosperity |
| Ease of Calculation | High |
| Ease of Interpretation | High |
| Ease of Comparability | High |
| More than one deprivation | No |
| Reflects depth or intensity | No |
| Current Organizational Uptake | Low |

Table B28: Societal poverty line number of poor (2011 PPP)

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|  Societal poverty line number of poor (2011 PPP) |
| World Bank PovcalNet Societal Poverty Line count |
| Indicator Type | Poverty |
| Methodology | The SPL was introduced in 2017 to complement the international poverty line of US$1.90 a day to reflect how the monetary definition of poverty at the national level vary as societies become richer over time. The introduction of this measure was recommended by the Commission on Global Poverty to “introduce a societal head count measure of global consumption poverty that takes account, above an appropriate level, of the standard of living in the country in question, thus combining fixed and relative elements of poverty”. The guiding principle of the IPL fixing the purchasing power of the IPL over time and across countries ensures that the material well-being of people can be assessed and compared meaningfully across the world. Although, this is relevant for goal related purposes, there are trade-offs in making this choice. For example, fixing the value of the line in constant PPP terms across all countries ensures that the bundle of goods that can be purchased is the same. As economies grow this bundle becomes less useful indicator of basic needs, making the social relevance of the IPL lessened over time in those places considering that needs change as countries become richer. Additionally, uniformity in the consumption bundle may not result in the same level of well-being across countries. Fixing the consumption bundle could result in unequal assessment of people across the world in terms of their ability to function in society in a socially acceptable manner such as participating in the labor market might require more goods in a richer country. Also, participation in society with dignity might require more goods in richer countries than in a poor country. This conceptual point is empirically supported, since there is significant variation across countries in how basic needs are defined using national poverty lines in which there is a strong positive correlation between the median level of consumption in each country and the assessment of basic needs. In other words, absolute national poverty lines are behaving like relative poverty lines since they become higher as economies grow over time. This said, the SPL is based on a poverty line that is adjusted for the median level of well-being in each country (consumption/income). Here, individuals living in extreme poverty as measured by the IPL will also be suffering from societal poverty. But the SPL will also consider individuals suffering from societal poverty if they are living on less than US$1.00 + half of the value of the median consumption per day in that country. The equation to define the SPL for each country calculated using 2011 PPP U.S dollars is as follows: SPL = max (US$1.90, US$1.00+ 0.5 \* median consumption). This equation was constructed using the empirical association between national poverty lines and median consumption found using 699 national poverty lines for different countries over time, in which the equation most closely fits the values in the data. In addition to fitting the data well, the slope coefficient of 0.5 is widely used by many countries and organizations as a measure of relative poverty and inclusion (e.g., the SDG indicator 10.2.1 on inequality). |
| Formula | Np\_ct = 1/N \* ∑ I(Yi<SPL\_ct) Here, I(.) is a indicator function that takes the value of 1 if the bracketed expression is true, and 0 otherwise. So if household per capita consumption/income a day (Yi) for household i is below the societal poverty line (SPL) in country c at time t, then I(.) equals 1 and each individual in household i would be counted as poor. The SPL is calculated as follows for each country c at time t: SPL = max(US$1.90, US$1.00 + 0.5 x median consumption for country c at time t). NPt is the total number of poor at point t in time. |
| Method of Aggregation | Linear aggregation |
| Indicator Range | Millions of people |
| Higher Poverty at Higher/Lower Value | Higher |
| Measured Poverty Component(s) | Consumption & Income |
| Proxy Components | N/A |
| Multidimensional | No |
| Indicator Disaggregation | None |
| Threshold vs. Poverty Line | Threshold: Other; Poverty line: Other |
| Count vs. Depth | Count |
| Data Sources | CWIQ, HBS, HIES, ICP, IHS, LFS, LISD, LSMS, PS |
| Commentary on Data Sources | Data are based on primary household survey data obtained from government statistical agencies and World Bank country departments. Household survey data include the following: Core Welfare Indicator Questionnaire Survey 2010-2014. Expenditure survey/budget survey (ES/BS) 1999-2017. Income survey (IS) 2014-2017. Integrated household survey (IHS), 1992-2018. Labor force survey (LFS), 1999-2016. Living Standards Measurement Study Survey (LSMS), 1998-2017. Priority survey (PS), 1993 -2017. Data for high-income economies are from the Luxembourg Income Study database. |
| Organization Producing Indicator | World Bank |
| Organization(s) Using Indicator | World Bank, ILO |
| Organizational Uses of Indicator | World Bank: The SPL essentially reflects typical assessments of basic needs for countries at different levels of economic development. World Bank: this new measure also defines someone as suffering from societal poverty if they live on less than $1 plus half of what the median person in their country consumes. As countries get richer and median consumption levels increase, the societal poverty line (SPL) increases in value. For example, in a country where the median level of consumption per person is $3.00 per day, the SPL is $2.50, ($1 + 0.5\*$3.00). |
| Government(s) Using Indicator | N/A |
| Governmental Uses of Indicator | N/A |
| Geographic Coverage (Number of Countries) | 165 |
| Earliest Year of Indicator | 1990 |
| Frequency of Indicator Production | Annually |
| Link | https://www.worldbank.org/en/publication/poverty-and-shared-prosperity |
| Ease of Calculation | High |
| Ease of Interpretation | Medium |
| Ease of Comparability | High |
| More than one deprivation | No |
| Reflects depth or intensity | No |
| Current Organizational Uptake | Low |

Table B29: World Poverty Clock (WPC)

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| World Poverty Clock (WPC) |
| World Poverty Clock estimates the current number of individuals living in poverty by country through the use of national household surveys, and then projects those counts forward using IMF GDP projections and IPCC SocioEconomic Pathways (SSP) scenarios to assess country progress on SDG 1. They characterize poverty eradication as having a share of extreme poor population ($1.90/day) less than 3%. |
| Indicator Type | Poverty |
| Methodology | For all countries for which distributional data on income or consumption exist, we estimate a Beta–Lorenz curve summarizing the distribution of income using information from the most recent survey. This yields parameter estimates that can then be used to obtain current predictions of the proportion of population living below the threshold of $1.90 per day in 2011 PPP terms. The poverty headcount estimates for the economies without distributional information are obtained using fitted values based on cross-country regressions of poverty headcount ratios on GDP per capita. Since household surveys for different countries are available for different points in time, we adjust the survey mean to the most recent year using the growth of household expenditure per capita taken from national accounts data, and then repeat the first step of our procedure to derive the number of poor people in that year. Finally, we combine scenarios of the future dynamics of average GDP per capita with assumptions on changes in the shape of the income distribution by country to project poverty headcounts. World Poverty Clock estimates the current number of individuals living in poverty by country through the use of national household surveys, and then projects those counts forward using IMF GDP projections and IPCC SocioEconomic Pathways (SSP) scenarios to assess country progress on SDG 1. They characterize poverty eradication as having a share of extreme poor population ($1.90/day) less than 3%. |
| Formula | L(p)Beta = p-θp^Γ(1-p)^δ Beta-Lorenz curve. θHΓ (1-H)^δ [(γ/H)-(δ /(1-H))] = 1 - (z/μ ) Headcount ratio. Estimate Beta-Lorenz curves for each country, summarizing the distribution of income that are used to make poverty headcount predictions of the proportion of the population living below the $1.90/day threshold in 2011 PPP terms. Survey means are adjusted to the most recent year using the growth of household expenditure per capital taken from national accounts data. |
| Method of Aggregation | Time-translated cumulative distribution function |
| Indicator Range | Millions of people |
| Higher Poverty at Higher/Lower Value | Higher |
| Measured Poverty Component(s) | Income |
| Proxy Components | N/A |
| Multidimensional | No |
| Indicator Disaggregation | Gender, Rural/Urban |
| Threshold vs. Poverty Line | Threshold: Global; Poverty line: Absolute |
| Count vs. Depth | Count |
| Data Sources | NAD |
| Commentary on Data Sources | National-level household surveys, World Bank's PovCal Database for within-country distribution of income and consumption, Poverty and Equity Database World Bank, UNU-WIDER's World Income Inequality Database, GDP forecasts by the IMF (World Economic Outlook Database), structural economic growth projections by Crespo-Cuaresma and Dellink et al., SSP scenarios from the IPCC |
| Organization Producing Indicator | World Data Lab NGO |
| Organization(s) Using Indicator | CWW |
| Organizational Uses of Indicator | It's unclear whether IFAD and GIZ actually use the indicator, but they underwrote the development of the tool. World Data Lab: provides real-time estimates of poverty for almost every country. |
| Government(s) Using Indicator | India |
| Governmental Uses of Indicator | To get an overview of estimation of poverty by various expert groups in India. |
| Geographic Coverage (Number of Countries) | 188 |
| Earliest Year of Indicator | 2017 |
| Frequency of Indicator Production | Annually |
| Link | https://worldpoverty.io/map |
| Ease of Calculation | Low |
| Ease of Interpretation | Low |
| Ease of Comparability | High |
| More than one deprivation | No |
| Reflects depth or intensity | No |
| Current Organizational Uptake | Medium |

Table B30: Global Food Security Index (GFSI)

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| Global Food Security Index (GFSI) |
| Quantitative and qualitative benchmarking model, constructed from 28 unique indicators, that measures drivers of food security across 109 countries. |
| Indicator Type | Food Security |
| Methodology | There are two sets of weights provided in the index: one is neutral weights, and the other is the peer panel recommendation (the default weighting in the model). Indicator scores are normalized and then aggregated across categories to enable a comparison of broader concepts across countries. The normalization method, by which the underlying data for all series are converted into comparable scores of 0-100, has been updated. In the current 2021 edition, upper and lower threshold values are specified for all series (the data values which correspond to a score of 100 and zero respectively). This has been done to ensure that data outliers do not skew the scores. The same upper and lower thresholds are applied across all years 2012-21 for each series. In previous editions, normalization thresholds for some series were calculated based on the minimum and maximum data values appearing in the dataset in each given year. Applying the same normalization thresholds across all years means that scores can be compared directly across years; this makes for more intuitive time-series analysis. The index is a dynamic quantitative and qualitative benchmarking model constructed from 58 unique indicators that measure the drivers of food security across both developing and developed countries. It looks at the issues of food affordability, availability, quality and safety, and natural resources and resilience. Prior to 2020, Natural resources and resilience wasn't its own category but rather an adjustment factor (since 2017). Data for the quantitative indicators are drawn from national and international statistical sources. Where there were missing values in quantitative or survey data, Economist Impact has used estimates. Estimated figures have been noted in the model workbook. Of the qualitative indicators, some have been created by Economist Impact, based on information from development banks and government websites, while others have been drawn from a range of surveys and data sources, and adjusted by the Economist Impact team. The main sources used in the GFSI are The Economist Intelligence Unit, the World Bank Group, the UN Food and Agriculture Organization (FAO), the World Health Organization (WHO), the World Trade Organization (WTO), the OECD, Notre Dame Global Adaptation Initiative (NDGAIN), the World Resources Institute (WRI), Yale Environmental Performance Index (EPI), the US Department of Agriculture (USDA), and national agriculture and health ministries. The 113 countries were chosen based on regional diversity, economic importance, population size, regional representation. |
| Formula | Normalization: x = (x – Lower threshold(x)) / (Upper threshold(x) – Lower threshold(x)) where Lower threshold (x) and Upper threshold (x) are specified for all series. Unfavorable food security normalization: x = (x – Upper threshold(x)) / (Upper threshold(x) – Lower threshold(x)) where Lower threshold(x) and Upper threshold(x) are specified for all series. |
| Method of Aggregation | Weighted average |
| Indicator Range | [0;100] |
| Higher Poverty at Higher/Lower Value | Lower |
| Measured Poverty Component(s) | Proxy |
| Proxy Components | Access to Economic Opportunities, Assets, Food Security |
| Multidimensional | Yes |
| Indicator Disaggregation | None |
| Threshold vs. Poverty Line | Threshold: Global; Poverty line: Absolute |
| Count vs. Depth | Count |
| Data Sources | AQUASTAT, CEN, CPI, FBS, GEAQ, ITU, LOSS |
| Commentary on Data Sources | Data come from ~50 sources, but most of them are the same sources cited in the Data Source list (CPI, household surveys, GNI, etc.). The poverty measure they use in the Affordability is the Poverty line: Number of poor at international poverty line $3.20 a day (2011 PPP). Another part of the Affordability score is mobile subscribers, which comes via the ITU from NRA/NSO surveys. There are also a number of sub-indicators that are qualitatively scored by EIU analysts, such as whether food safety net programmes are present in the country. Availability sub-indicators come from sources like the FBS, GEAQ, AQUASTAT, LOSS, and many more. It should be noted that the data sources listed in the Data Source list are those from the first 3 pages of data sources listed in the GFSI report appendix, exclusive of the EIU qualitative data; there were 9 pages in total. Therefore, the Data Sources associated with GFSI should not be considered exhaustive, since there were too many to be listed here. This should be considered a common challenge presented by any composite index. |
| Organization Producing Indicator | The Economist Intelligence Unit |
| Organization(s) Using Indicator | World Data Lab, UNICEF, UNDP, ODI, IFAD, WFP |
| Organizational Uses of Indicator | To measure food security at the country level (is not people-centered and therefore cannot delve into households or inequality). |
| Government(s) Using Indicator | N/A |
| Governmental Uses of Indicator | N/A |
| Geographic Coverage (Number of Countries) | 113 |
| Earliest Year of Indicator | 2012 |
| Frequency of Indicator Production | Annually |
| Link | https://impact.economist.com/sustainability/project/food-security-index/ |
| Ease of Calculation | Low |
| Ease of Interpretation | Low |
| Ease of Comparability | High |
| More than one deprivation | Yes |
| Reflects depth or intensity | No |
| Current Organizational Uptake | Low |

Table B31: Global Hunger Index (GHI)

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| Global Hunger Index (GHI) |
| Aggregate scores for 1. Undernourishment; 2. Child Wasting; 3. Child Stunting; 4, Child Mortality, scaled relative to highest observed global value of each. |
| Indicator Type | Food Security |
| Methodology | First, for each country, values are determined for four indicators: 1. Undernourishment; 2. Child Wasting; 3. Child Stunting; 4, Child Mortality. Second, each of the four component indicators is given a standardized score on a 100-point scale based on the highest observed level for the indicator on a global scale in recent decades. Third, standardized scores are aggregated to calculated the GHI score for each country, with each of the three dimensions (inadequate food supply; child mortality; and child undernutrition, which is composed equally of child stunting and child wasting) given equal weight. |
| Formula | GHI score = 1/3\*(standardized % of undernourished population or ST PUN) + 1/6\*(standardized % of wasting in children under 5 years old or ST CWA)+ 1/6\*(Standardized % of stunting in children under 5 years old or ST CST) + 1/3\* (standardized % of children dying before the age of 5 or ST CM). Standardized components: ST PUN= PUN/80\*100; ST CWA= CWA/30\*100; ST CST= CST/70\*100; ST CM= CM/35\*100. |
| Method of Aggregation | Simple average |
| Indicator Range | [0;100] |
| Higher Poverty at Higher/Lower Value | Higher |
| Measured Poverty Component(s) | Proxy |
| Proxy Components | Food Security |
| Multidimensional | Yes |
| Indicator Disaggregation | Age |
| Threshold vs. Poverty Line | N/A |
| Count vs. Depth | Other |
| Data Sources | DHS, MICS |
| Commentary on Data Sources | Data for the indicators come from data collection efforts by various UN and other multilateral agencies. Undernourishment data are provided by the Food and Agriculture Organization of the United Nations (FAO). Child mortality data are sourced from the United Nations Interagency Group for Child Mortality Estimation (UN IGME). Child wasting and child stunting data are drawn from the joint database of UNICEF, the World Health Organization (WHO), and the World Bank, as well as from WHO’s continuously updated Global Database on Child Growth and Malnutrition, the most recent reports of the Demographic and Health Surveys (DHS) and Multiple Indicator Cluster Surveys (MICS), and statistical tables from UNICEF. |
| Organization Producing Indicator | Concern Worldwide and Welthungerhilfe |
| Organization(s) Using Indicator | FAO, CCOF, Corteva, IFAJ, Foragro, World Bank |
| Organizational Uses of Indicator | To measure and track hunger and to spotlight areas with the greatest need to eliminate hunger. |
| Government(s) Using Indicator | Ethiopia |
| Governmental Uses of Indicator | Ethiopia: To understand the factors that lead to food insecurity and households’ vulnerability. |
| Geographic Coverage (Number of Countries) | 116 |
| Earliest Year of Indicator | 2000 |
| Frequency of Indicator Production | ~6 years |
| Link | https://www.globalhungerindex.org/ |
| Ease of Calculation | High |
| Ease of Interpretation | Low |
| Ease of Comparability | High |
| More than one deprivation | Yes |
| Reflects depth or intensity | Yes |
| Current Organizational Uptake | Low |

Table B32: Number of severely food insecure people (million)

|  |
| --- |
| Number of severely food insecure people (million) |
| Number of individuals in each country living in households where at least one adult was found to be severely food insecure. |
| Indicator Type | Food Security |
| Methodology | Food insecurity refers to limited access to food at the individual level due to lack of money or other resources. This indicator estimates the number of individuals in each country living in households where at least one adult was found to be severely food insecure. The severity of food insecurity is measured using data collected with the Food Insecurity Experience Scale survey module (FIES-SM), a set of eight questions asking to self-report conditions and experiences typically associated with limited access to food. Based on the Rasch measurement model, the information obtain in the survey is used to construct a scale of food insecurity severity. Here, each individual interviewed in a nationally representative survey is assigned a probability of being one of three classes: food secure or marginally insecure, moderately food insecure, and severely food insecure using globally defined threshold. Following, the prevalence of food insecurity at each level of severity in the population is calculated as the weighted sum of the probability of being food insecure for all respondents (i) in the sample: FI =∑Pi Wi. Finally, since only individual age 15 or older are interviewed, a multistep procedure is required to estimate the prevalence and number of individual (all ages) that are food insecure. |
| Formula | The Basch model used to calculate a scale of food insecurity severity is the following: Prob(Xi,j = Yes) = exp(ai –bj) /( 1+exp(ai –bj)) Here the model estimates the probability of observing an affirmative answer by respondent i to question j is a logistic function of the distance, on an underlying scale of severity, between the position of the respondent ai, and that of the item bj. Then, the model can calculate the probability of being food insecure at each threshold of severity for each respondent i. Then, the prevalence of food insecurity at each threshold is calculated as the weighted sum of the probability of being food insecure for all respondents (i) in the sample: FI = ∑Pi\*Wi. Where Wi are post-stratification weights that indicate the proportion of individuals in the national population represented at each threshold in the sample. |
| Method of Aggregation | Multistep process which includes logistic function model and weighted averages |
| Indicator Range | Millions of people |
| Higher Poverty at Higher/Lower Value | Higher |
| Measured Poverty Component(s) | Proxy |
| Proxy Components | Food Security |
| Multidimensional | No |
| Indicator Disaggregation | Gender |
| Threshold vs. Poverty Line | Threshold: Global |
| Count vs. Depth | Count |
| Data Sources | FIES-SM |
| Commentary on Data Sources | Food Insecurity Experience Scale survey module (FIES-SM) included in the Gallup World Poll (GWP). Additionally, FAO collected for 20 countries (Afghanistan, Burkina Faso, Cameroon, Central African Republic, Chad, Democratic Republic of the Congo, El Salvador, Ethiopia, Guatemala, Haiti, Iraq, Liberia, Mozambique, Myanmar, Niger, Nigeria, Sierra Leone, Somalia, South Africa and Zimbabwe) data through the GeoPoll with the specific objective of addressing food insecurity during the Covid-19 pandemic. Also, national government surveys for a set of countries was used to calculate the indicator. (Afghanistan, Angola, Armenia, Botswana, Burkina Faso, Cabo Verde, Canada, Chile, Costa Rica, Ecuador, Fiji, Ghana, Greece, Grenada, Honduras, Indonesia, Israel, Kazakhstan, Kenya, Kiribati, Kyrgyzstan, Lesotho, Malawi, Mauritania, Mexico, Morocco, Namibia, Niger, Nigeria, Palestine, Philippines, Republic of Korea, Russian Federation, Saint Lucia, Samoa, Senegal, Seychelles, Sierra Leone, South Sudan, Sudan, Tonga, Uganda, United Republic of Tanzania, United States of America, Vanuatu, Viet Nam and Zambia) |
| Organization Producing Indicator | FAO |
| Organization(s) Using Indicator | FAO, PAHO, World Bank, WHO, UNICEF, WFP, IFAD |
| Organizational Uses of Indicator | FAO: Used to complement the number of hungry people determined based on the POU |
| Government(s) Using Indicator | Ethiopia, UK, USA |
| Governmental Uses of Indicator | Ethiopia: To understand the factors that lead to food insecurity and households vulnerability. UK: To measure the impacts of Covid-19. US: COVID-19 impact on food insecurity |
| Geographic Coverage (Number of Countries) | 121 |
| Earliest Year of Indicator | 2014 |
| Frequency of Indicator Production | Annually |
| Link | https://www.fao.org/faostat/en/#data/FS |
| Ease of Calculation | Low |
| Ease of Interpretation | Medium |
| Ease of Comparability | High |
| More than one deprivation | No |
| Reflects depth or intensity | No |
| Current Organizational Uptake | High |

Table B33: Number of undernourished people (million) (3-year average)

|  |
| --- |
| Number of undernourished people (million) (3-year average) |
| Prevalence of undernourishment x Total Population. Prevalence of undernourishment expresses the probability that a randomly selected individual from the population consumes an amount of calories that is insufficient to cover her/his energy requirement for an active and healthy life. |
| Indicator Type | Food Security |
| Methodology | Estimated number of people at risk of undernourishment. It is calculated by applying the estimated prevalence of undernourishment to total population in each period. The prevalence of undernourishment expresses the probability that a randomly selected individual from the population consumes an amount of calories that is insufficient to cover her/his energy requirement for an active and healthy life. The indicator is computed by comparing a probability distribution of habitual daily dietary energy consumption with a threshold level called the minimum dietary energy Requirement. Both are based on the notion of an average individual in the reference population. First, the prevalence of undernourishment (PoU) - which is an estimate of the percentage of individuals in the total population that are in a condition of undernourishment - must be calculated. To calculate the PoU estimates, the probability distribution of habitual dietary energy intake levels (Kcal per person per day) for an average individual is modeled as parametric probability density function. The indicator is obtained as the cumulative probability that daily habitual dietary energy intakes (x) are below minimum dietary energy requirements (MDER). To calculate the PoU estimates, we need to construct two parameters: the mean dietary energy consumption (DEC) and its coefficient of variation (CV). The MDER are determined based on normative requirements for basic metabolic rate per kilogram of body mass, multiplied by the ideal weight that a healthy person given his height for each gender/age group, considering physical activity. The MDER for the total population is calculated by the weighted average of the lower bounds of the MDER for each gender and age group. The underlying data source for population structure and median height for each country is the UN Department of Economic and Social Affairs (DESA) Population Prospects (produced every two years), and the DHS respectively. The DEC and CV parameters can be directly calculated by using reliable data on food consumption from nationally representative household surveys that collect information on food consumption (Living Standard Measurement Surveys or Household Income or Expenditure Surveys). When these type of data sources are not available, the DEC and CV parameters are estimated from the dietary energy supply (DES) reported in the Food Balance Sheets (FBS), compiled by FAO for most countries in the world. Then, PoU estimates are produced for each country for which reliable FBS data are available. Here, PoU estimates for the current year are obtained by separately projecting each parameter of the model and then applying the PoU formula presented in the formula section. |
| Formula | Number of undernourished people = ∫x<MDER f(x|θ)dx \* Population. Here θ is a vector of parameters that characterizes the pdf function. In most cases, the distribution is assumed to be lognormal, and thus fully characterized by only two parameters: the mean dietary energy consumption (DEC) and its coefficient of variation (CV). In some cases, a three-parameter skew-normal or skew-lognormal distribution is considered  |
| Method of Aggregation | Parametric probability density function |
| Indicator Range | Millions of people |
| Higher Poverty at Higher/Lower Value | Higher |
| Measured Poverty Component(s) | Proxy |
| Proxy Components | Food Security |
| Multidimensional | No |
| Indicator Disaggregation | None |
| Threshold vs. Poverty Line | Threshold: Global |
| Count vs. Depth | Other |
| Data Sources | DHS, FBS, HIES, LSMS |
| Commentary on Data Sources | LSMS and Household Income and Expenditure Surveys. Food Balance Sheets (FBS) by FAO. UN Department of Economic and Social Affairs (DESA) Population Prospects (produced every two years), and the DHS. |
| Organization Producing Indicator | FAO |
| Organization(s) Using Indicator | FAO, PAHO, World Bank, WHO, UNICEF, WFP, IFAD |
| Organizational Uses of Indicator | 1. how COVID-19 has affected world hunger 2. Pandemic year marked by spike in world hunger described through this indicator |
| Government(s) Using Indicator | N/A |
| Governmental Uses of Indicator | N/A |
| Geographic Coverage (Number of Countries) | 130 |
| Earliest Year of Indicator | 2000 |
| Frequency of Indicator Production | Annually |
| Link | https://www.fao.org/faostat/en/#data/FS |
| Ease of Calculation | Low |
| Ease of Interpretation | Medium |
| Ease of Comparability | High |
| More than one deprivation | No |
| Reflects depth or intensity | No |
| Current Organizational Uptake | High |

Table B34: Prevalence of moderate or severe food insecurity in the total population (percent)

|  |
| --- |
| Prevalence of moderate or severe food insecurity in the total population (percent) |
| FIES-SM: Moderate = inability to regularly eat healthy, balanced diets. |
| Indicator Type | Food Security |
| Methodology | Food insecurity as measured by this indicator refers to limited access to food, at the level of individuals or households, due to lack of money or other resources. The severity of food insecurity is measured using data collected with the Food Insecurity Experience Scale survey module (FIES-SM), a set of eight questions asking to self-report conditions and experiences typically associated with limited access to food. For purposes of annual SDG monitoring, the questions are asked with reference to the 12 months preceding the survey. Using the Rasch measurement model, the information obtained in a survey is validated for internal consistency and converted into a quantitative measure along a scale of severity, ranging from low to high. Based on their responses to the FIES-SM items, the individuals or households interviewed in a nationally representative survey of the population are assigned a probability of being in one of three classes: food secure or only marginally insecure, moderately food insecure and severely food insecure as defined by two globally set thresholds. Based on FIES data collected over three years from 2014 to 2016, FAO has established the FIES reference scale, which is used as the global standard for experience-based food-insecurity measures, and to set the two reference thresholds of severity. SDG Indicator 2.1.2 is obtained as the cumulated probability to be in the two classes of moderate and severe food insecurity. |
| Formula | The prevalence of food insecurity at each level of severity (FIL) in the population is computed as the weighted sum of the probability of being food insecure for all respondents (i) in a sample: FI L = ∑pi,Lwi |
| Method of Aggregation | Weighted average |
| Indicator Range | % (0-100) |
| Higher Poverty at Higher/Lower Value | Higher |
| Measured Poverty Component(s) | Proxy |
| Proxy Components | Food Security |
| Multidimensional | No |
| Indicator Disaggregation | Gender, Household income, composition (including for example presence and number of small children, members with disabilities, elderly members, etc.), and education of the household head |
| Threshold vs. Poverty Line | Threshold: Global; Poverty line: Relative |
| Count vs. Depth | Count |
| Data Sources | FIES-SM |
| Commentary on Data Sources | The Food Insecurity Experience Scale Survey module (FIES-SM) developed by FAO, and/or any of the other experience-based food security scale questionnaires that can be calibrated against the global FIES. These surveys can be used at the individual or household scale. Since 2014, it has been covered by the Gallup World Poll. |
| Organization Producing Indicator | FAO |
| Organization(s) Using Indicator | FAO, WHO, World Economic Forum, WFP, UN, UNICEF, IFAD, PAHO, UNDP, OECD |
| Organizational Uses of Indicator | To measure progress against SDG 2. PAHO: contribute to the policy dialogue for post-pandemic recovery, which is fundamental to closing gaps in equality and meeting the goals of the 2030 Agenda for Sustainable Development. |
| Government(s) Using Indicator | USA |
| Governmental Uses of Indicator | To understand the trends in prevalence rates of food security/insecurity status. And COVID-19 impact on food insecurity |
| Geographic Coverage (Number of Countries) | 137 |
| Earliest Year of Indicator | 2014 |
| Frequency of Indicator Production | Annually |
| Link | https://www.fao.org/sustainable-development-goals/indicators/212/en/ |
| Ease of Calculation | Low |
| Ease of Interpretation | High |
| Ease of Comparability | High |
| More than one deprivation | No |
| Reflects depth or intensity | No |
| Current Organizational Uptake | High |

Table B35: Prevalence of severe food insecurity in the total population (percent)

|  |
| --- |
| Prevalence of severe food insecurity in the total population (percent) |
| FIES-SM: Severe = a high probability of reduced food intake |
| Indicator Type | Food Security |
| Methodology | Food insecurity as measured by this indicator refers to limited access to food, at the level of individuals or households, due to lack of money or other resources. The severity of food insecurity is measured using data collected with the Food Insecurity Experience Scale survey module (FIES-SM), a set of eight questions asking to self-report conditions and experiences typically associated with limited access to food. For purposes of annual SDG monitoring, the questions are asked with reference to the 12 months preceding the survey. Using the Rasch measurement model, the information obtained in a survey is validated for internal consistency and converted into a quantitative measure along a scale of severity, ranging from low to high. Based on their responses to the FIES-SM items, the individuals or households interviewed in a nationally representative survey of the population are assigned a probability of being in one of three classes: food secure or only marginally insecure, moderately food insecure and severely food insecure as defined by two globally set thresholds. Based on FIES data collected over three years from 2014 to 2016, FAO has established the FIES reference scale, which is used as the global standard for experience-based food-insecurity measures, and to set the two reference thresholds of severity. (FI sev) is computed by considering only the severe food-insecurity class. |
| Formula | The prevalence of food insecurity at each level of severity (FIL) in the population is computed as the weighted sum of the probability of being food insecure for all respondents (i) in a sample: FI L = ∑pi,Lwi |
| Method of Aggregation | Weighted average by population |
| Indicator Range | % (0-100) |
| Higher Poverty at Higher/Lower Value | Higher |
| Measured Poverty Component(s) | Proxy |
| Proxy Components | Food Security |
| Multidimensional | No |
| Indicator Disaggregation | Gender, Household income, composition (including for example presence and number of small children, members with disabilities, elderly members, etc.), and education of the household head |
| Threshold vs. Poverty Line | Threshold: Global; Poverty line: Relative |
| Count vs. Depth | Count |
| Data Sources | FIES-SM |
| Commentary on Data Sources | The Food Insecurity Experience Scale Survey module (FIES-SM) developed by FAO, and/or any of the other experience-based food security scale questionnaires that can be calibrated against the global FIES. These surveys can be used at the individual or household scale. Since 2014, it has been covered by the Gallup World Poll. |
| Organization Producing Indicator | FAO |
| Organization(s) Using Indicator | FAO, PAHO, World Bank, WHO, UNICEF, WFP, IFAD |
| Organizational Uses of Indicator | To measure progress against SDG 2. PAHO: contribute to the policy dialogue for post-pandemic recovery, which is fundamental to closing gaps in equality and meeting the goals of the 2030 Agenda for Sustainable Development. |
| Government(s) Using Indicator | USA |
| Governmental Uses of Indicator | To understand the trends in prevalence rates of food security/insecurity status. |
| Geographic Coverage (Number of Countries) | 137 |
| Earliest Year of Indicator | 2014 |
| Frequency of Indicator Production | Annually |
| Link | https://www.fao.org/sustainable-development-goals/indicators/212/en/ |
| Ease of Calculation | Low |
| Ease of Interpretation | High |
| Ease of Comparability | High |
| More than one deprivation | No |
| Reflects depth or intensity | No |
| Current Organizational Uptake | High |

 Table B36: Prevalence of undernourishment (percent)

|  |
| --- |
| Prevalence of undernourishment (percent) |
| Percentage of individuals in the total population that are in a condition of undernourishment, which is defined as the condition of an individual whose habitual food consumption is insufficient to provide, on average, the amount of dietary energy required to maintain a normal, active and healthy life. |
| Indicator Type | Food Security |
| Methodology | The prevalence of undernourishment expresses the probability that a randomly selected individual from the population consumes an amount of calories that is insufficient to cover her/his energy requirement for an active and healthy life. The indicator is computed by comparing a probability distribution of habitual daily dietary energy consumption with a threshold level called the minimum dietary energy Requirement. Both are based on the notion of an average individual in the reference population. To compute an estimate of the prevalence of undernourishment in a population, the probability distribution of habitual dietary energy intake levels (expressed in kcal per person per day) for the average individual is modelled as a parametric probability density function (pdf), f(x). The indicator is obtained as the cumulative probability that the habitual dietary energy intake (x) is below the minimum dietary energy requirements (MDER) (i.e. the lowest limit of the range of energy requirements for the population’s representative average individual) as in the formula below: PoU = ∫x<MDER f(x|θ)dx, where θ is a vector of parameters that characterizes the pdf. The distribution is assumed to be lognormal, and thus fully characterized by only two parameters: the mean dietary energy consumption (DEC), and its coefficient of variation (CV). |
| Formula | To compute an estimate of the prevalence of undernourishment in a population, the probability distribution of habitual dietary energy intake levels (expressed in kcal per person per day) for the average individual is modelled as a parametric probability density function (pdf), f(x). The indicator is obtained as the cumulative probability that the habitual dietary energy intake (x) is below the minimum dietary energy requirements (MDER) (i.e. the lowest limit of the range of energy requirements for the population’s representative average individual) as in the formula below: PoU = ∫x<MDER f(x|θ)dx, where θ is a vector of parameters that characterizes the pdf. The distribution is assumed to be lognormal, and thus fully characterized by only two parameters: the mean dietary energy consumption (DEC), and its coefficient of variation (CV). |
| Method of Aggregation | Parametric probability density function |
| Indicator Range | % (0-100) |
| Higher Poverty at Higher/Lower Value | Higher |
| Measured Poverty Component(s) | Proxy |
| Proxy Components | Food Security |
| Multidimensional | No |
| Indicator Disaggregation | None |
| Threshold vs. Poverty Line | Threshold: Global |
| Count vs. Depth | Count |
| Data Sources | DHS, FBS, FIES-SM |
| Commentary on Data Sources | DHS, Food Balance Sheets (FAO), FIES |
| Organization Producing Indicator | FAO |
| Organization(s) Using Indicator | FAO, PAHO, IFAD, WHO, UNICEF, WFP, World Bank, UNDP, OECD |
| Organizational Uses of Indicator | To measure progress towards SDG Target 2.1 and understand access to food in terms of dietary energy inadequacy. |
| Government(s) Using Indicator | USA |
| Governmental Uses of Indicator | To measure global average life expectancy and links to health and nutrition |
| Geographic Coverage (Number of Countries) | 193 |
| Earliest Year of Indicator | 2000 |
| Frequency of Indicator Production | Annually |
| Link | https://www.fao.org/faostat/en/#data |
| Ease of Calculation | Low |
| Ease of Interpretation | High |
| Ease of Comparability | High |
| More than one deprivation | No |
| Reflects depth or intensity | No |
| Current Organizational Uptake | High |

 Appendix C: Matrix of Data Source Use by Indicator

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
|  |  |  |  |  |  | Indicator |  |
| AI | FB | IHME | IMD | IWI | LPI | ML | MPI | MPM | PG | PL | PPI | AMPI | SSS | SPL | WPC | GFSI | GHI | NS | NU | PMS | PSFI | PU | **Total** |
| Data Source | AFB |  |  |  |  | Y | Y |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | **2** |
| AMB |  |  |  |  | Y |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | **1** |
| AQUASTAT |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | Y |  |  |  |  |  |  | **1** |
| CEN |  |  |  | Y |  |  |  |  |  |  |  |  |  | Y |  |  | Y |  |  |  |  |  |  | **3** |
| CPI |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | Y |  |  |  |  |  |  | **1** |
| CWIQ |  |  |  |  |  |  |  |  | Y | Y | Y |  |  |  | Y |  |  |  |  |  |  |  |  | **4** |
| DHS |  | Y | Y |  | Y |  | Y | Y |  |  |  |  | Y |  |  |  |  | Y |  | Y |  |  | Y | **9** |
| FBS |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | Y |  |  | Y |  |  | Y | **3** |
| FIES-SM |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | Y |  | Y | Y | Y | **4** |
| GEAQ |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | Y |  |  |  |  |  |  | **1** |
| HBS |  |  | Y |  |  |  |  |  | Y | Y | Y |  |  |  | Y |  |  |  |  |  |  |  |  | **5** |
| HIES |  |  | Y |  |  |  |  |  | Y | Y | Y |  |  |  | Y |  |  |  |  | Y |  |  |  | **6** |
| ICP |  |  |  |  |  |  |  |  | Y | Y | Y |  |  |  | Y |  |  |  |  |  |  |  |  | **4** |
| IHS |  |  | Y |  |  |  |  |  | Y | Y | Y |  |  |  | Y |  |  |  |  |  |  |  |  | **5** |
| ILO-IPEC |  |  |  |  | Y |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | **1** |
| ITU |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | Y |  |  |  |  |  |  | **1** |
| LFS |  |  | Y |  |  |  |  |  | Y | Y | Y |  |  |  | Y |  |  |  |  |  |  |  |  | **5** |
| LISD |  |  | Y |  |  |  |  |  | Y | Y | Y |  |  |  | Y |  |  |  |  |  |  |  |  | **5** |
| LOSS |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | Y |  |  |  |  |  |  | **1** |
| LSMS | Y |  | Y |  |  |  | Y |  | Y | Y | Y |  |  |  | Y |  |  |  |  | Y |  |  |  | **8** |
| MICS |  |  |  |  | Y |  |  | Y |  |  |  |  | Y |  |  |  |  | Y |  |  |  |  |  | **4** |
| NAD |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | Y |  |  |  |  |  |  | Y | **1** |
| PAPFAM |  |  |  |  | Y |  |  |  |  |  |  |  | Y |  |  |  |  |  |  |  |  |  |  | **2** |
| PPIS |  |  |  |  |  |  |  |  |  |  |  | Y |  |  |  |  |  |  |  |  |  |  |  | **1** |
| PS |  |  | Y |  |  |  |  |  | Y | Y | Y |  |  |  | Y |  |  |  |  |  |  |  |  | **5** |
| WHS |  |  |  |  | Y |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | **1**  |
|  | **Total** | **1** | **1** | **7** | **1** | **7** | **1** | **2** | **2** | **9** | **9** | **9** | **1** | **3**  | **1** | **9** | **1** | **7** | **2** | **1** | **4** | **1** | **1** | **3** |  |

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Raw data sources and their abbreviations

|  |  |
| --- | --- |
| Raw data source | Acronym |
| Afrobarometer | AFB |
| AmericasBarometer | AMB |
| Water and Agriculture Questionnaire | AQUASTAT |
| Census | CEN |
| Country CPI | CPI |
| Core Welfare Indicator Questionnaire Survey (2010-2014) | CWIQ |
| Demographic Health Survey | DHS |
| Food Balance Sheets | FBS |
| Food Insecurity Experience Scale survey module | FIES-SM |
| Annual Questionnaire on Government Expenditure on Agriculture and Related Categories | GEAQ |
| National Household Budget Surveys | HBS |
| National Household Income and Expenditure Surveys (HIES) | HIES |
| ICP PPP | ICP |
| Integrated Household Survey | IHS |
| National Child Labor Surveys | ILO-IPEC |
| ITU Questionnaire | ITU |
| Labour force surveys | LFS |
| Luxembourg Income Study Database | LISD |
| Questionnaire on Food Losses from Production to the Retail Stages | LOSS |
| Living Standards Measurement Study Survey | LSMS |
| Multiple Indicator Cluster Survey | MICS |
| National Accounts data | NAD |
| Pan Arab Project for Family Health (PAPFAM) - Family Health Survey | PAPFAM |
| Poverty Probability Index Survey | PPIS |
| Priority Survey | PS |
| World Health Surveys | WHS |

 | Poverty indicators and their abbreviations

|  |  |
| --- | --- |
| Indicator | Acronym |
| Asset Index | AI |
| Facebook Relative Wealth Index | FB |
| IHME estimates of extreme poverty | IHME |
| Index of Multiple Deprivation | IMD |
| International Wealth Index | IWI |
| Lived Poverty Index | LPI |
| Machine-learning guided classification of satellite imagery | ML |
| MPI: Global Multidimensional Poverty Index (all) | MPI |
| Multidimensional Poverty Measure | MPM |
| Poverty gap (all) | PG |
| Poverty line (all) | PL |
| Poverty Probability Index | PPI |
| Revised Arab Multidimensional Poverty Index | AMPI |
| Self-Sufficiency Standard | SSS |
| Societal Poverty Line (all) | SPL |
| World Poverty Clock | WPC |
| Global Food Security Index | GFSI |
| Global Hunger Index | GHI |
| Number of severely food insecure people (million) | NS |
| Number of undernourished people (million) | NU |
| Prevalence of moderate or severe food insecurity  | PMS |
| Prevalence of severe food insecurity in the total population | PSFI |
| Prevalence of undernourishment (percent) | PU |

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Appendix D: Poverty and Food Security Indicators Excluded from Analysis

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| Indicator | Reason for Exclusion | Description |
| African Gender and Development Index (AGDI) | Monetary, income, or consumption component is solely based on a national level wealth measure | The AGDI provides a mechanism for measuring the status of women as compared to men in the social, economic, and political spheres. |
| African Infrastructure Development Index | No monetary, income, or consumption measure | The African Infrastructure Development Index serves three key objectives, namely: to monitor and evaluate the status and progress of infrastructure development across the continent; to assist in resource allocation within the framework of the African Development Fund replenishments; and to contribute to policy dialogue within the Bank and between the Bank, African countries, and development partners. |
| Better Life Index | Well-being is not a proxy for poverty | Allows the user to compare well-being across countries, based on 11 topics the Organizations for Economic Co-operation and Development has identified as essential, in the areas of material living conditions and quality of life. |
| Capability Poverty Measure | Not current | The Capability Poverty Measure considers the lack of three basic capabilities. The first is the lack of being well nourished and healthy, represented in this case by the proportion of children under five years who are underweight. The second is the lack of capability for healthy reproduction, shown by the proportion of births unattended by trained personnel. The third is the lack of capability to be educated and knowledgeable, represented by female illiteracy. |
| Combined Quality of Life Index | Not current | The Basic Quality of Life Index is designedprimarily to discriminate between developing countries and includes seven variables: purchasing power, homicide rate, fulfillment of basic physical needs, suicide rate, literacy rate, gross human rights violations, and deforestation. The Advanced Quality of Life Index, designed primarily to assess quality of life in highly industrialized nations, includes seven variables: physicians per capita, savings rate, per capita income, subjective well-being, percent attending college, income equality, and environmentaltreaties signed. Combining the two indices produced a reliable measure of Quality of Life that systematically covers diverse human values. |
| Composite Dynamic Human Development Index | Monetary, income, or consumption component is solely based on a national level wealth measure | It incorporates in a simple way additional points which are significant for the current concept of human development and provides a dynamic factor that distinguishes between countries based on achievements attained. It helps ensure that the static average data on which the HDI is based does not conceal wide-ranging economic, social, and political differences within countries, lack of sustainability in current levels of development or effective development strategies drawn up by governments. |
| Composite Global Wellbeing Index | Well-being is not a proxy for poverty | The Composite Global Well-Being Index (CGWBI) spans ten well-being dimensions: safety and security, health, education, housing, environment and living space, employment, income, life satisfaction, community and social life, and civic engagement. The index includes both subjective survey data and socio-economic indicators, and uses the same methodology as the Organization for Economic Co-operation and Development (OECD) Better Life Index, by extending it to developing countries |
| Composite Wellness Index | Well-being is not a proxy for poverty | No further details available. |
| Correlation Sensitive Poverty Index | Not a calculated measure | The Correlation Sensitive Poverty Index (CSPI) is a counting index like the MPI and therefore shares its decomposability as well as its simplicity. However, the CSPI does not require a cut-off. Instead of excluding households from the calculations, it weights each household according to the number of weighted items that it lacks. |
| Correlation Sensitive Multidimensional Gini Index | Monetary, income, or consumption component is solely based on a national level wealth measure | The Correlation Sensitive Multidimensional Gini Index measures inequality of well-being with a multidimensional generalization of the Gini coefficient. T inequality indices are derived from their underlying social evaluation functions. These functions are conceived as a double aggregation function: one across the dimensions of well-being, and another across the individuals. They differ only with respect to the sequencing of aggregations. Sequencing does not exclude the Gini index to be sensitive to the correlation between the dimensions is more attractive.  |
| Corruption Perceptions Index | No monetary, income, or consumption component; not related to measuring poverty | The Corruption Perceptions Index (CPI) is the most widely used global corruption ranking in the world. It measures how corrupt each country’s public sector is perceived to be, according to experts and businesspeople.  |
| DataBank Index | World development indicators from the World Bank, these are included separately  | World Development Indicators (also known as the DataBank Index) is the primary World Bank collection of development indicators, compiled from officially recognized international sources. It presents the most current and accurate global development data available, and includes national, regional, and global estimates.  |
| Development Diamonds | Monetary, income, or consumption component is solely based on a national level wealth measure; not current | Experts at the World Bank use so-called development diamonds to portray relationships among four socioeconomic indicators for a given country relative to the averages for that country’s income group (low-income, lower-middle-income, upper-middle-income, or high-income). Life expectancy at birth, gross primary (or secondary) enrollment, access to safe water, and GNP per capita are presented, one on each axis, then connected with bold lines to form a polygon. The shape of this “diamond” can easily be compared to the reference diamond, which represents the average indicators for the country’s income group, each indexed to 100 percent. Any point outside the reference diamond shows a value better than the group average, while any point inside signals below-average achievement. |
| DHS Wealth Index | No monetary, income, or consumption component | Typically, fertility surveys and demographic and health surveys have included little information on economic status. In the past, socioeconomic status has been determined using the education level of the respondent and/or spouse, sometimes in combination with their own or their spouse’s occupation. A few studies have used household construction, mostly type of flooring, as an economic indicator, and some others have combined several housing characteristics into ad hoc indexes. The DHS wealth index is an attempt to make better use of existing data in the Demographic and Health Surveys in a systematic fashion to determine a household’s relative economic status.  |
| Ease of Doing Business Index | No monetary, income, or consumption component; not current; not related to measuring poverty | This Ease of Doing Business helps assess the absolute level of regulatory performance over time. It captures the gap of each economy from the best regulatory performance observed on each of the indicators across all economies in the *Doing Business* sample since 2005. An economy’s ease of doing business score is reflected on a scale from 0 to 100, where 0 represents the lowest and 100 represents the best performance. For example, an ease of doing business score of 75 in *Doing Business 2019*means an economy was 25 percentage points away from the best regulatory performance constructed across all economies and across time. A score of 80 in *Doing Business 2020*would indicate the economy is improving. |
| Economic Security Index | Not related to measuring poverty | The Economic Security Index (ESI) is an integrated measure of insecurity that shows how common large economic losses are within the U.S. population. It is possible to compare the ESI across American states over the last generation.  |
| Economic Vulnerability Index | Monetary, income, or consumption component is solely based on a national level wealth measure | No further details available. |
| EFA Development Index | No monetary, income, or consumption component; not related to measuring poverty | The EFA Development Index is a composite index using four of the six Education For All goals, selected based on data availability. The goals are:* Universal primary education
* Adult literacy
* Quality of education
* Gender
 |
| Energy Development Index | Not current | The Energy Development Index measures the progress in transitioning to reliable, clean and efficient fuels and energy services - like electricity and modern cooking appliances - at the household and community levels for each of 80 countries. |
| Environmental Performance Index | No monetary, income, or consumption component; not related to measuring poverty | Using 32 performance indicators across 11 issue categories, the Environmental Performance Index (EPI) ranks 180 countries on environmental health and ecosystem vitality. These indicators provide a gauge at a national scale of how close countries are to established environmental policy targets. The EPI offers a scorecard that highlights leaders and laggards in environmental performance and provides practical guidance for countries that aspire to move toward a sustainable future |
| Environmental Sustainability Index | No monetary, income, or consumption component; not related to measuring poverty | The Environmental Sustainability Index is a measure of overall progress towards environmental sustainability.  The index provides a composite profile of national environmental stewardship based on a compilation of indicators derived from underlying datasets. |
| Ethical Poverty Line | Not current; this is a proposal | Responding to the Millennium Development Goal challenge to halve 'extreme' poverty by 2015, it has been argued that we have a moral duty to ensure that economic growth benefits the world's poorest. However, this morality is only partial if absolute poverty is defined by the somewhat arbitrary $1-a-day poverty line. If this moral duty exists, then a morally defensible poverty line needs to be developed. Drawing on established health literature, this paper innovates by linking an analysis of world consumption to life outcome data, all from current World Bank datasets, to derive such a poverty line, termed here the Ethical Poverty Line (EPL). The EPL is comparable to the $2-a-day poverty line increasingly quoted by the World Bank. At this level, the EPL not only quantifies the substantial scale of socioeconomic change needed to eliminate absolute poverty but also raises challenging questions about the scale of over-consumption in the developed world. |
| Fordham Francis Index | Well-being is not a proxy for poverty | The Fordham Francis Index (FFI) is a response to Pope Francis’ call for a simple yet broad measure of poverty and wellbeing. The FFI is comprised of seven primary indicators which are broad enough to encompass different measures of poverty. The seven primary indicators are organized and aggregated into two main categories. What is unique to this index is the inclusion of spiritual wellbeing measures. |
| Gallup-Sharecare Well-Being Index | Well-being is not a proxy for poverty | The Gallup-Sharecare Well-being Index (GSWBI) brings together more than 600 proven health risk factors into a single measure. By combining both individual and social factors, the GSWBI uniquely measures well-being across people and places. The index is based on decades of clinical research, health care leadership, and health economics. Regular surveys within every community in the United States are conducted. After the data is analyzed, each community is scored on a scale of 0 to 100. Updated every year, our GSWBI is based on responses from more than 3 million surveys and 600+ social determinants of health. |
| Gender Empowerment Measure | Not current | Replaced by the Gender Inequality Index |
| Gender Equality Index | Not related to measuring poverty | The Gender Equality Index is a tool to measure the progress of gender equality in the European Union, developed by European Institute for Gender Equality. It gives more visibility to areas that need improvement and ultimately supports policy makers to design more effective gender equality measures. |
| Gender Inequality Index | No monetary, income, or consumption component; not related to measuring poverty | The Gender Inequality Index is an inequality index. It measures gender inequalities in three important aspects of human development—reproductive health, measured by maternal mortality ratio and adolescent birth rates; empowerment, measured by proportion of parliamentary seats occupied by females and proportion of adult females and males aged 25 years and older with at least some secondary education; and economic status, expressed as labor market participation and measured by labor force participation rate of female and male populations aged 15 years and older. |
| Gender Development Index | Monetary, income, or consumption component is solely based on a national level wealth measure | The Gender Development Index (GDI) measures gender gaps in human development achievements by accounting for disparities between women and men in three basic dimensions of human development—health, knowledge and living standards using the same component indicators as in the HDI. The GDI is the ratio of the HDIs calculated separately for females and males using the same methodology as in the HDI. It is a direct measure of gender gap showing the female HDI as a percentage of the male HDI. |
| General Index of Development | Not current | No further details available. |
| Genuine Progress Indicator | Monetary, income, or consumption component is solely based on a national level wealth measure | Genuine Progress Indicator (GPI) is a metric designed to take fuller account of the well-being of a nation, only a part of which pertains to the health of the nation’s economy, by incorporating environmental and social factors which are not measured by Gross Domestic Product (GDP). GPI has been suggested to replace, or supplement, GDP as a measure of economic growth. |
| Genuine Savings (Adjusted Net Savings) | Monetary, income, or consumption component is solely based on a national level wealth measure | Adjusted Net Savings is measured as gross national saving minus the depreciation of produced capital, depletion of subsoil assets and timber resources, the cost of pollution damages, plus a credit for education expenditures. |
| Gini Coefficient | Monetary, income, or consumption component is solely based on a national level wealth measure | The Gini index, or Gini coefficient, measures income distribution across a population. It often serves as a gauge of economic inequality, measuring income distribution or, less commonly, wealth distribution among a population. |
| Global AgeWatch Index | Not related to measuring poverty | The Global AgeWatch Index makes international comparisons of quality of life in older age possible. The Index is a tool to measure progress and aims to improve the impact of policy and practice on ageing populations. The Index brings together a unique set of internationally comparable data based on older people's income status, health status, capability (education and employment), and enabling environment. These domains have been selected because they were identified by older people and policy makers alike as key enablers of older people's wellbeing. |
| Global Entrepreneurship Index | Not related to measuring poverty | The Global Entrepreneurship and Development Institute’s (GEDI) methodology collects data on the entrepreneurial attitudes, abilities, and aspirations of the local population and then weights these against the prevailing social and economic ‘infrastructure’ – this includes aspects such as broadband connectivity and the transport links to external markets. This process creates 14 ‘pillars’ which GEDI uses to measure the health of the regional ecosystem. |
| Global Gender Gap Index | Monetary, income, or consumption component is solely based on a national level wealth measure | The Global Gender Gap Index benchmarks the evolution of gender-based gaps among four key dimensions (Economic Participation and Opportunity, Educational Attainment, Health and Survival, and Political Empowerment) and tracks progress towards closing these gaps over time. |
| Global Innovation Index | Not related to measuring poverty | The Global Innovation Index's overall formula for measuring an economy's innovative capacity and output provides clarity for decision makers in government, business and elsewhere as they look forward to creating policies that enable their people to invent and create more efficiently. |
| Global Well-Being Index | Well-being is not a proxy for poverty | Gallup’s global wellbeing metrics are the first comprehensive measure of the behavioral economics of gross national wellbeing, which lays the foundation for all other measures of a country’s economic strength. With ongoing research projects in more than 150 countries, Gallup is a leader in the collection and analysis of global data and measurements. Gallup asks ordinary individuals for their thoughts and opinions on several topics, including economics, religion, migration, and wellbeing. Gallup’s data provide sound evidence on many issues that more than 98% of the world’s adult population faces.  |
| GNI per capita PPP | Monetary, income, or consumption component is solely based on a national level wealth measure | GNI per capita PPP is gross national income in purchasing power parity (PPP) divided by mid-year population. |
| Good Country Index | No monetary, income, or consumption component | The idea of the Good Country Index is simple: to measure what each country on earth contributes to the common good of humanity, and what it takes away, relative to its size. Using a wide range of data from the U.N. and other international organizations, each country was given a balance-sheet to show briefly whether it’s a net creditor to mankind, a burden on the planet, or something in between. It’s important to explain that moral judgments are not made about countries. A Good Country is a country that contributes to the greater good of humanity. A country that serves the interests of its own people, but without harming - and preferably by advancing - the interests of people in other countries too. |
| Green GDP | Monetary, income, or consumption component is solely based on a national level wealth measure | The green gross domestic product is an index of economic growth with the environmental consequences of that growth factored into a country's conventional GDP. Green GDP monetizes the loss of biodiversity, and accounts for costs caused by climate change.  |
| Gross Domestic Product (GDP) | Monetary, income, or consumption component is solely based on a national level wealth measure | Gross domestic product is the total monetary or market value of all the finished goods and services produced within a country’s borders in a specific time period. |
| Gross National Happiness | Happiness is not a proxy for poverty | The GNH measure has been designed to fulfill the various criteria that are needed for an official national measure of happiness that is relevant to national and district policy. The Gross National Happiness Index is generated to reflect the happiness and general wellbeing of the Bhutanese population more accurately and profoundly than a monetary measure. The measure will both inform the Bhutanese people and the wider world about the current levels of human fulfillment in Bhutan and how these vary across districts and across time and will also inform government policy. |
| Happy Planet Index | Well-being is not a proxy for poverty | The Happy Planet Index is a measure of sustainable wellbeing, ranking countries by how efficiently they deliver long, happy lives using our limited environmental resources. |
| HCP Standard of Living Index | Not current | The Standard of Living Index (INV), developed by the *High Commission for Planning* (HCP) on the basis of a data base collected via surveys on households’ standard of living and consumption. The INV measures multidimensional poverty. It covers access to education, health (medical-health coverage and consultation), healthy and balanced nutrition (drinking water availability, decent nutrition (according to the WHO-FAO standards) and sustainable self-protection from food poverty), housing conditions (decent housing, equipped with electricity, liquid sanitation, refrigerator, bath/shower, kitchen, toilet and stove), vocational integration represented by the economic activity of the household’s members and employment opportunities for young people, social equity and gender equality, respectively measured by the position in the social ladder of the standard of living and gender equality in terms of education- training, health care, and access to means of communication and transportation. |
| Hicks Index | Not current | The main question under consideration: how to construct an index of human development that is appropriately sensitive to the distribution of human development. Following a suggestion in Anand and Sen (1994), Hicks (1997) proposed the following index HG(D) = µ[ µ(x)(1-G(x), µ(y)(1-G(y)), µ(z)(1-G(z)] = µ[ S(x), S(y), S(z)], where x, y and z are the rows of D. The index HG discounts the mean of each variable by its Gini level of inequality, and then averages across the dimensional welfare levels using the standard mean. In other words, it is the mean of the Sen welfare levels across the three dimensions of income, education and health.  |
| HIS | Not current | No further details available. |
| Human Asset Index | No monetary, income, or consumption component | The Human Assets Index is a composite index of education and health used as an identification criterion for less-developed countries by the United Nations Committee Development Policy. |
| Human Development Index | Monetary, income, or consumption component is solely based on a national level wealth measure | The Human Development Index (HDI) is a summary measure of average achievement in key dimensions of human development: a long and healthy life, being knowledgeable and have a decent standard of living. The HDI is the geometric mean of normalized indices for each of the three dimensions: long and healthy life, knowledge, and a decent standard of living. |
| Human Freedom Index | Not related to measuring poverty | The Human Freedom Index presents the state of human freedom in the world based on a broad measure that encompasses personal, civil, and economic freedom. Human freedom is a social concept that recognizes the dignity of individuals and is defined here as negative liberty or the absence of coercive constraint. Because freedom is inherently valuable and plays a role in human progress, it is worth measuring carefully. The Human Freedom Index is a resource that can help to more objectively observe relationships between freedom and other social and economic phenomena, as well as the ways in which the various dimensions of freedom interact with one another. |
| Human Potential Index | Not current; this is a proposal | No further details available. |
| Human Poverty Index | Not current | Replaced by the multidimensional poverty index |
| Human Poverty Index (HPI-1) - for developing countries | Not current | Replaced by the multidimensional poverty index |
| Human Poverty Index (HPI-2) - for industrial countries | Not current | Replaced by the multidimensional poverty index |
| Human Resource Development Index | Not current | Replaced by the multidimensional poverty index |
| Human Security Index | Monetary, income, or consumption component is solely based on a national level wealth measure | The Human Security Index (HSI) aims to characterize the security of an individual or group at home, in one’s village, country, and the Earth. Is everyone treated well, not unduly deprived of education/knowledge and a healthy and peaceful life? The HSI aims to support existing and future developers of well-intentioned indicators which may be used by development analysts/strategists/implementers, by emphasizing outcomes rather than modalities. The HSI is now conceptually framed in a trinity of economic, environmental, and social fabric.  |
| Human Suffering Index | Not current | The Human Suffering Index purports to show, for 130 developed and developing countries, correlations between a summary measure of the level of suffering and population growth rates. Reconsideration of the evidence indicates that the correlations are largely the result of reverse causation and/or due to the simple observation that presently developed countries began "modern economic growth" earlier than less developed countries. In the latter countries, key measures of human suffering are at most only weakly correlated with population change. |
| Human Sustainable Development Index | Monetary, income, or consumption component is solely based on a national level wealth measure | Adds an environmental dimension to the HDI by using a fourth dimension: per capita carbon emissions. |
| Human Vulnerability Index | Not current | There are at least two benefits that can be derived from the construction of a Composite Vulnerability Index, namely: a) the index can attract attention towards the issue of economic vulnerability of SIDS; and b) it presents a single-value measure of vulnerability based on meaningful criteria which can be considered by donor countries and organizations when taking decisions regarding the allocation of financial and technical assistance or for assigning special status to SIDS by international organizations such as the WTO.  |
| Human Well-Being Index | Well-being is not a proxy for poverty | The US Environmental Protection Agency (EPA) has developed a human well-being index (HWBI) that assesses the over-all well-being of its population at the county level. The HWBI contains eight domains and represents social, economic, and environmental well-being. These domains include 25 indicators comprised of 88 metrics and 25 social, economic, and environmental services. The HWBI has been applied for the nation at the county level and two alternative applications have been made to represent key populations within the overall US population – Native Americans and children. |
| Hε Indices | Monetary, income, or consumption component is solely based on a national level wealth measure | Based off the HDI but uses a distribution-sensitive human development index which judges aggregate achievements according to the harmonic mean, and hence is even more sensitive to inequality. |
| Index of Economic Freedom | Not related to measuring poverty | The Index of Economic Freedom was created to measure the degree of economic freedom in the world’s nations. The Index helps users track over two decades of the advancement in economic freedom, prosperity, and opportunity. The Index covers 12 freedoms – from property rights to financial freedom – in 184 countries. |
| Index of Real Consumption | Monetary, income, or consumption component is solely based on a national level wealth measure | No further details available. |
| Index of Social Health | Not current | The Index of Social Health is based on sixteen social indicators. These are: infant mortality, child abuse, child poverty, teenage suicide, teenage drug abuse, high school dropouts, unemployment, weekly wages, health insurance coverage, poverty among the elderly, out-of-pocket health-care costs among the elderly, homicides, alcohol-related traffic fatalities, food insecurity, affordable housing, and income inequality. |
| Index of Social Progress | Not accessible | The *Index of Social Progress* (ISP) was developed in 1973 by Richard J. Estes of the University of Pennsylvania School of Social Policy & Practice. The index has been continuously refined by Estes, and today, the ISP, and its statistically weighted version, the “WISP,” is used to assess the changing capacity of countries to satisfy the basic social and material needs of their populations. While not a direct measure of quality of life, the purpose of the index is to assess the extent to which societies are succeeding in reducing the barriers to development that impede people’s ability to improve their overall life quality. |
| Index of Sustainable Economic Welfare | Monetary, income, or consumption component is solely based on a national level wealth measure | The Index of Sustainable Economic Welfare (ISEW) is roughly defined by the following formula:ISEW = personal consumption+ public non-defensive expenditures- private defensive expenditures+ capital formation+ services from domestic labor- costs of environmental degradation- depreciation of natural capital |
| Indices of Social Development | No monetary, income, or consumption component | The Indices of Social Development brings together 275 indicators, synthesizing them into a usable set of measures to track how different societies perform along six dimensions of social development: civic activism, clubs and associates, intergroup cohesion, interpersonal safety and trust, gender equality, and inclusion of minorities. |
| Inequality Adjusted HDI | Monetary, income, or consumption component is solely based on a national level wealth measure | The inequality adjusted HDI (IHDI)combines a country’s average achievements in health, education, and income with how those achievements are distributed among country’s population by “discounting” each dimension’s average value according to its level of inequality. Thus, the IHDI is distribution-sensitive average level of human development. Two countries with different distributions of achievements can have the same average HDI value. Under perfect equality the IHDI is equal to the HDI but falls below the HDI when inequality rises. |
| Information and Communication Technology Index | No monetary, income, or consumption component | The ICT Development Index (IDI) is a composite index combining 11 indicators into one benchmark measure that serves to monitor and compare developments in information and communication technology across countries.  |
| Islamic Human Development Index | Monetary, income, or consumption component is solely based on a national level wealth measure | The existing Human Development Index not fully compatible and sufficient for measuring human development in the Islamic perspective since it is not based on Maq id al-Shar ah. The Islamic Human Development is a new measurement of human development under the Islamic perspective and then simulates the index to measure human development levels in the Organization of Islamic Cooperation countries. |
| Laeken Indicators | Not current | The European Union has agreed a core set of poverty and social exclusion indicators for every EU country on a comparable basis. These indicators are known as the ‘Laeken Indicators’. |
| Legatum Prosperity Index | No monetary, income, or consumption component | Prosperity is far more than wealth; it is when all people have the opportunity and freedom to thrive. Through the Legatum Prosperity Index, analysis of the performance of each of the 167 countries can be carried out on the key characteristics of inclusive societies, open economies, and empowered people. 12 pillars were used, comprising 67 different elements, measured by 300 discrete country-level indicators, using a wide array of publicly available data sources. This comprehensive set of indicators provides an incredibly rich and holistic policy-focused dataset representing over 99% of the world's population, thereby allowing the potential of each country to be identified and understood. This in turn enables significantly better targeted policy responses that can drive tangible improvements in prosperity. |
| Level of Living Index | Not current | No further details available |
| Life Satisfaction Index | Well-being is not a proxy for poverty | The Life Satisfaction Index A measures the psychological well-being in elderly, with dimensions such as zest for life, fortitude, congruence between desired and achieved goals, physical, psychological and social self-concept. |
| Living Planet Index | Not related to measuring poverty | For two decades, the Living Planet Index has provided a measure for changes in biodiversity that has helped inform the global debate on the nature loss crisis. |
| Mazziotta-Pareto Index | Not current; this is a proposal | The measurement of development or poverty as multidimensional phenomena is very difficult because there are several theoretical, methodological, and empirical problems involved. The literature of composite indicators offers a wide variety of aggregation methods, all with their pros and cons. A new, alternative composite index denoted as MPI (Mazziotta-Pareto Index) is proposed which, starting from a linear aggregation, introduces penalties for the countries or geographical areas with ‘unbalanced’ values of the indicators. As an example of application of the MPI, a set of indicators is considered in order to measure the Millennium Development Goals (MDGs) and we present a comparison between HDI methodology, HPI (Human Poverty Index) methodology and MPI. |
| Measure of America | Monetary, income, or consumption component is solely based on a national level wealth measure | *The Measure of America* presents a modified American Human Development Index. The American Human Development Index measures the same three basic dimensions as the standard HDI, but it uses different indicators to better reflect the U.S. context and to maximize use of available data. For example, while the standard index measures access to knowledge using the average number of years that students spend in school, we have chosen instead to use educational attainment, a more demanding indicator. |
| Millennium Development Goals Progress Index | The sub targets will be included | In September 2000, leaders from 189 nations agreed on a vision for the future: a world with less poverty, hunger and disease, greater survival prospects for mothers and their infants, better educated children, equal opportunities for women, and a healthier environment; a world in which developed and developing countries worked in partnership for the betterment of all. This vision took the shape of eight Millennium Development Goals, which provide a framework of time-bound targets by which progress can be measured.To help track progress on the commitment made in the year 2000 in the United Nations Millennium Declaration, international and national statistical experts selected relevant indicators to be used to assess progress over the period from 1990 to 2015, when targets are expected to be met |
| Multidimensional Inequality Indices | Monetary, income, or consumption component is solely based on a national level wealth measure | No further details available. |
| Multiple Correspondence Analysis | This is a proposal | Multiple correspondence analysis (MCA) is an extension of correspondence analysis which allows one to analyze the pattern of relationships of several categorical dependent variables. As such, it can also be seen as a generalization of principal component analysis when the variables to be analyzed are categorical instead of quantitative. Because MCA has been rediscovered many times, equivalent methods are known under several different names such as optimal scaling, optimal or appropriate scoring, dual scaling, homogeneity analysis, scalogram analysis, and quantification method. |
| National Accounts Aggregates | Monetary, income, or consumption component is solely based on a national level wealth measure | The National Accounts Main Aggregates Database presents a series of analytical national accounts tables from 1970 onwards for more than 200 countries and areas of the world. It is the product of a global cooperation effort between the Economic Statistics Branch of the United Nations Statistics Division, international statistical agencies and the national statistical services of these countries and is developed in accordance with the recommendation of the Statistical Commission at its first session in 1947 that the Statistics Division should publish regularly the most recent available data on national accounts for as many countries and areas as possible. The database is updated in December of each year with newly available national accounts data for all countries and areas. |
| National Accounts of Well-Being | Well-being is not a proxy for poverty | National Accounts of Well-being presents a radical, robust proposal to guide the direction of modern societies and the lives of people who live in them. It demonstrates why national governments should directly measure people’s subjective well-being: their experiences, feelings and perceptions of how their lives are going. It calls for these measures to be collected on a regular, systematic basis and published as National Accounts of Well-being. The measures are needed because the economic indicators which governments currently rely on tell us little about the relative success or failure of countries in supporting a good life for their citizens. |
| Northern Forest Wealth Index | Not current | No further details available. |
| Principal Component Analysis | This is a proposal | Principal component analysis is a technique for reducing the dimensionality of such datasets, increasing interpretability but at the same time minimizing information loss. It does so by creating new uncorrelated variables that successively maximize variance. |
| Political Instability Index | Catalogue of indices; not an indicator itself | The use of indices to measure changes in countries across different policy areas is becoming increasingly frequent. From human rights to conflict, from governance to gender, many organizations have invested in developing statistical models that derive data from multiple sources and rank countries according to their score. The International Peace Institute’s *Global Observatory* provides the first list of country indices available in open sources. It reviews thirty indices and provides a description of the methodology and results. |
| Poverty Assessment Tool | Not current | USAID Poverty Assessment Tools (PATs) are free, easy to use tools for assessing poverty levels of any group of people. Development practitioners use PATs to assess their success at reaching out to poor and very poor people, to compare poverty levels of those who are engaged in different practice areas, or track changes in poverty level over time. Each PAT survey consists of 10-25 questions. Results - the percent of the target population living above and below a given national or international poverty line - can be analyzed in our custom data entry & analysis templates or within your own analysis software. |
| Poverty PPPs | Monetary, income, or consumption component is solely based on a national level wealth measure | Poverty PPPs are an important key research area for the International Comparison Program (ICP). Using the PPPs as calculated by the ICP for the purposes of the global poverty count faces two main shortcomings. Firstly, the price indexes that underlie the PPPs are constructed for purposes of national income accounting, using weights that represent patterns of aggregate consumption, not the consumption patterns of the global poor. Second, the basket of goods and services used for collecting prices for the ICP is not geared towards the consumption of the poor per se. However, to obtain meaningful poverty lines, it is important that the PPPs used for conversion incorporate the prices paid by the poor, and the relative importance of different goods and services they consume, as reflected by the expenditure share weights of the poor households. |
| Prescot-Allen’s Index of the Wellbeing of Nations | Well-being is not a proxy for poverty | The Wellbeing of Nations has two components: human well-being and ecosystem well-being. Each component is measure by 5 dimensions which were aggregated from performance scores. |
| Quality of Growth Index | Monetary, income, or consumption component is solely based on a national level wealth measure; this is a proposal | A new quality of growth index (QGI) for developing countries is proposed. The index encompasses both the intrinsic nature and social dimensions of growth and is computed for over 90 countries for the period 1990-2011. The approach is premised on the fact that not all growth is created equal in terms of social outcomes, and that it does matter how one reaches from one level of income to another for various theoretical and empirical reasons. |
| Quality of Life Index (Where-To-Be-Born Index) | Not current | The Quality-of-Life Index, which attempts to measure which country will provide the best opportunities for a healthy, safe and prosperous life in the years ahead, links the results of subjective life-satisfaction surveys—how happy people say they are—to objective determinants of the quality of life across countries. Being rich helps more than anything else, but it is not all that counts, things like crime, trust in public institutions and the health of family life matter too. In all, the index takes 11 statistically significant indicators into account. They are a mixed bunch: some are fixed factors, such as geography; others change only very slowly over time (demography, many social and cultural characteristics); and some factors depend on policies and the state of the world economy. |
| Safe Cities Index | No monetary, income, or consumption component; this is a proposal | The Safe Cities Index reflects the multifaceted nature of urban safety, with indicators divided into four distinct pillars: digital, infrastructure, health and personal security. |
| Social Inequality Composite Index | Not current | No further details available. |
| Social Capital Index | Not related to measuring poverty | The Social Capital of a nation is the sum of social stability and the well-being (perceived or real) of the entire population. Social Capital generates social cohesion and a certain level of consensus, which in turn delivers a stable environment for the economy and prevents natural resources from being over-exploited. |
| Social Institutions and Gender Index | Not related to measuring poverty | The Organization for Economic Co-operation and Development Centre’s Social Institutions and Gender Index (SIGI) measures discrimination against women in social institutions across 180 countries. By considering laws, social norms and practices, the SIGI captures the underlying drivers of gender inequality with the aim to provide the data necessary for transformative policy-change. |
| Social Progress Index | No monetary, income, or consumption component | Rather than emphasizing traditional measurements of success like income and investment, the Social Progress Index measures 53 social and environmental indicators to create a clearer picture of what life is really like for everyday people. The index doesn’t measure people’s happiness or life satisfaction, focusing instead on actual life outcomes in areas from shelter and nutrition to rights and education. This exclusive focus on measurable outcomes makes the index a useful policy tool that tracks changes in society over time. |
| Social Wealth Economic Indicators | Not current | The Social Wealth Economic Indicators (SWEIs) developed by the Center for Partnership Systems demonstrate the enormous economic benefits of investing in the work of caring for people and our environment. Unlike conventional measures such as Gross Domestic Product (GDP), and unlike most GDP alternatives, SWEIs demonstrate the substantial financial return from caring for people and nature—and the enormous costs of not doing so. SWEIs also differ from other metrics in that they not only measure where we are (outputs) but also what investments (inputs) are needed for a healthy and sustainable economy and society. Unlike other measures, SWEIs pay attention to the status of most of the population (women and children) and how this affects everyone’s well-being. They are essential for a strong and sustainable economy and to reduce the disproportionate poverty of women and children worldwide. |
| Subjective Well-Being | Well-being is not a proxy for poverty; this is a proposal | The literature on subjective well-being (SWB), including happiness, life satisfaction, and positive affect, is reviewed in three areas: measurement, causal factors, and theory. |
| Sustainable Energy Development Index | No monetary, income, or consumption component; this is a proposal | The sustainable energy development index focuses on establishing the sustainability level of both intra- and inter-generational needs as well as attempting to capture the sustainability dimension adequately. |
| The Ecological Footprint | Not related to measuring poverty | On the demand side, the Ecological Footprint adds up all the productive areas for which a population, a person or a product competes. It measures the ecological assets that a given population or product requires to produce the natural resources it consumes (including plant-based food and fiber products, livestock and fish products, timber and other forest products, space for urban infrastructure) and to absorb its waste, especially carbon emissions. The Ecological Footprint tracks the use of productive surface areas. Typically, these areas are cropland, grazing land, fishing grounds, built-up land, forest area, and carbon demand on land.On the supply side, a city, state, or nation’s biocapacity represents the productivity of its ecological assets (including cropland, grazing land, forest land, fishing grounds, and built-up land). These areas, especially if left unharvested, can also serve to absorb the waste we generate, especially our carbon emissions from burning fossil fuel. |
| The Physical Quality of Life Index | No monetary, income, or consumption component; not current | Gross National Product (GNP) is the standard measure of progress but does not show how output is distributed. The Physical Quality of Life Index (PQLI) is a summation of complex social interrelationships on which no theoretical explanation imposes any given weights/biases. Equal weight is assigned to each component. The life expectancy in Nigeria is 49, infant mortality, 180/1000, and literacy, 25%. The PQLI is 25. The life expectancy at age 1 in the U.S. is 72, infant mortality 16/1000, and literacy 99%, and the PQLI is 94. The PQLI informs about the changing distribution of social benefits among countries, between the genderes, among ethnic groups, and by region and sector. The PQLI facilitates international and regional comparisons by minimizing developmental and cultural ethnocentricities. As the gap closes between current performance and maximum attainable performance, the gaps between PQLI indices should close. The PQLI, with signs of lowered infant mortality and lengthened life expectancy, paints a less fatalistic pessimistic picture than the GNP. |
| Vulnerability Poverty | Another name for the MPI | Another name for the MPI |
| Water Poverty Index | No monetary, income, or consumption component, this is a proposal | The purpose of the Water Poverty Index is to express an interdisciplinary measure which links household welfare with water availability and indicates the degree to which water scarcity impacts on human populations. Such an index makes it possible to rank countries and communities within countries considering both physical and socio-economic factors associated with water scarcity. This enables national and international organizations concerned with water provision and management to monitor both the resources available and the socioeconomic factors which impact on access and use of those resources.  |
| Weighted Index of Social Progress | Monetary, income, or consumption component is solely based on a national level wealth measure | The Weight Index of Social Progress (WISP) is a composite index of quality of life at the country level. That is, the WISP index captures quality of life of most of the countries (countries that maintains social indicators data). The WISP consists of an overall composite score of each country (shown as an actual score varying from 0 to 100, ranks, and standard deviation from the mean). The overall index is made up of 10 subindices: education, health, women status, defense effort, economic, demography, environmental, social chaos, cultural cohesion, and welfare effort.  |
| World Happiness Report | Happiness is not a proxy for poverty | The World Happiness Report is a landmark survey of the state of global happiness that ranks 156 countries by how happy their citizens perceive themselves to be. |
| World Health Organization’s Quality of Life Measure (WHOQOL) | Not a calculated measure | The WHOQOL is a quality-of-life assessment developed by the WHOQOL Group with fifteen international field centers, simultaneously, to develop a quality-of-life assessment that would be applicable cross-culturally. |
| World Values Survey | No monetary, income, or consumption component | The World Values Survey (WVS) is a global network of social scientists studying changing values and their impact on social and political life. The survey, which started in 1981, seeks to use the most rigorous, high-quality research designs in each country. The WVS consists of nationally representative surveys conducted in almost 100 countries which contain almost 90 percent of the world’s population, using a common questionnaire. The WVS is the largest non-commercial, cross-national, time series investigation of human beliefs and values ever executed, currently including interviews with almost 400,000 respondents. Moreover, the WVS is the only academic study covering the full range of global variations, from very poor to very rich countries, in all the world’s major cultural zones. |
| Worldwide Governance Indicators | Not related to measuring poverty | The Worldwide Governance Indicators project reports aggregate and individual governance indicators for over 200 countries and territories over the period 1996–2020, for six dimensions of governance:* Voice and Accountability
* Political Stability and Absence of Violence/Terrorism
* Government Effectiveness
* Regulatory Quality
* Rule of Law
* Control of Corruption

These aggregate indicators combine the views of many enterprise, citizen, and expert survey respondents in industrial and developing countries.  They are based on over 30 individual data sources produced by a variety of survey institutes, think tanks, non-governmental organizations, international organizations, and private sector firms. |

Appendix E: Funders of the underlying data sources, from most- to least-used among poverty indicators

|  |  |  |
| --- | --- | --- |
| Data Source | Acronym | Funder(s) |
| Demographic and Health Surveys | DHS | USAID; UNICEF; UNFPA; World Bank; National Governments |
| Living Standards Measurements Study Survey | LSMS | World Bank; DFID; National Governments |
| Food Insecurity Experience Scale Survey Module | FIES-SM | National Governments; Kingdom of Belgium; European Union; Ministry of Agriculture, Forestry and Fisheries of Japan |
| Multiple Indicator Cluster Surveys | MICS | UNICEF; UNFPA; National Governments |
| Census | CEN | National Governments; UNFPA Population Data Thematic fund |
| Food Balance Sheets | FBS | FAO |
| Integrated Household Surveys | IHS | National Governments |
| Labour Force Surveys | LFS | National Governments |
| Priority Survey | PS | World Bank; UNICEF; National Governments |
| Afrobarometer | AFB | World Bank; USAID; DFID; SIDA; Other Foundations or Research Centers |
| Core Welfare Indicator Questionnaire Survey (2010-2014) | CWIQ | World Bank; UNDP; ILO; National Governments |
| ICP PPP | ICP | National Governments |
| National Household Income and Expenditure Surveys | HIES | National Governments; World Bank; UNDP |
| Pan Arab Project for Family Health – Family Health Survey | PAPFAM | OPEC; AGFUND; UNFPA; OFID; UNICEF; WHO; LAS |
| AmericasBarometer | AMB | USAID; Vanderbilt University; National Science Foundation; IADB |
| Annual Questionnaire on Government Expenditure on Agriculture and Related Categories | GEAQ | FAO |
| Country Consumer Price Index | CPI | National Governments |
| International Telecommunication Union Questionnaire | ITU | National Governments |
| National Accounts Data | NAD | National Governments |
| National Child Labour Surveys | ILO-IPEC | ILO; UNICEF; AfDB; World Bank; DFID; USAID; National Governments |
| National Household Budget Surveys | HBS | National Governments; World Bank; UNDP |
| Poverty Probability Index Survey | PPIS | Cisco Foundation; Mastercard Foundation; The Bill & Melinda Gates Foundation; FSD Africa; Grameen Foundation; Opportunity International; World Vision; Vision Fund International |
| Questionnaire on Food Losses from Production to the Retail Stages | LOSS | FAO |
| Water and Agriculture Questionnaire | AQUASTAT | FAO; National Governments |
| World Health Surveys | WHS | WHO |

1. In contrast, the 1995 World Summit for Social Development defined poverty as not only as the “lack of income and productive resources sufficient to ensure sustainable livelihoods…” but also “social discrimination and exclusion” and “lack of participation in decision-making and in civil, social, and cultural life” (De Schutter 2021). [↑](#footnote-ref-2)
2. We use the term “validity” as it is commonly used in elementary statistics books, as a general term to mean the degree to which an indicator measures what is intended, or an “instrument measures what it purports to measure.” Evaluation studies are generally concerned with specific types of validity, such as internal validity (is there a causal result) and external validity (is it generalizable). (Campbell and Stanley, 1966; Stahl and Hennes, 1980; and Becker, 1997). [↑](#footnote-ref-3)
3. See the World Bank. 2020. *Poverty and Shared Prosperity 2020: Reversals of Fortune.* Washington, DC: World Bank. doi: 10.1596/978-1-4648-1602-4. [↑](#footnote-ref-4)
4. See Box 1.1 p.29 for a description of the three new poverty measures presented in the World Bank. 2020. *Poverty and Shared Prosperity 2020: Reversals of Fortune.* Washington, DC: World Bank. doi: 10.1596/978-1-4648-1602-4. [↑](#footnote-ref-5)
5. The IHME estimates emerged from a one-time study in 2019. While the IHME estimated extreme poverty rates from historical data in the World Bank World Development Indicators database for years 1980-2017, it seems that these data have not been updated since the study was published. Data for years 2018-2050 are thus forecasted. [↑](#footnote-ref-6)
6. Similar to the IHME estimates, the Machine-learning guided classification indicator seems to depend on a one-time study that has not necessarily been updated since the study was published in 2016. Thus, this indicator is more of a potential indicator method than a live, currently used measure. [↑](#footnote-ref-7)
7. The language of “monetary welfare aggregates” comes from the World Bank, which primarily utilizes monetary measures of poverty (i.e., income or consumption) to assess the extent of poverty (defined as the absence of welfare). Because these measures are aggregates of household income, for example, they are referred to as “monetary welfare aggregates” (World Bank 2022). [↑](#footnote-ref-8)
8. In a comparison of data in Nigeria’s LSMS W4 survey (own analysis), households often reported obtaining enough food through the consumption module but severe deprivation in the food security model; little to no food insecurity in the last month (where reporting is more detailed) but significant food security of the past year; or had a child with a low weight-for-age value but low food scarcity. [↑](#footnote-ref-9)
9. The literature is not always consistent when using these two terms. For clarity, we will note when an indicator’s own description differs from the definitions we use in this report. [↑](#footnote-ref-10)
10. Government/bilateral usage search was not undergone for this indicator. Included in list for consistency with other report tables. [↑](#footnote-ref-11)
11. Governmental and bilateral organizations in explaining why they have used the poverty line indicators, use the words depth, intensity, and severity interchangeably. For consistency we use the word depth. This paper defines depth as the distance away from the poverty line, intensity as the rate of poverty and severity as a square of deprivation along single dimension to see how unequal the experience is of those under the poverty line. [↑](#footnote-ref-12)
12. See the OPHI training materials for detail on the many axioms that might be considered: https://ophi.org.uk/training-unidimensional-poverty-measurement/ [↑](#footnote-ref-13)
13. Note that undernourishment and food insecurity are not the same. Undernourishment is considered a synonym for hunger and measures the extent of hunger in the world. In contrast, food insecurity has to do with access to safe and nutritious food and unavailability or lack of resources to obtain food. Severe food insecurity may entail undernourishment and hunger. Both are measured in the Food Insecurity Experience Scale (FIES), one of the data sources examined in the next section, and utilize different methodologies for collection (Moncayo & Cafiero, 2022). [↑](#footnote-ref-14)
14. As outlined in the Methods section, the criterion of subpopulation disaggregation is rated by possible categories: high for 3 or more types of subpopulation disaggregation, medium if a source disaggregates by gender and/or age, and low if it does not allow any subpopulation disaggregation. These criteria don’t fit well for expenditure data sources or other sources that do not use a person or household as the unit of analysis. We coded this criterion according to person or household-based units of analysis, i.e. if spending is not specified by gender, age, or other characteristic of recipients, it is not considered a disaggregation. [↑](#footnote-ref-15)
15. Counts in this column reflect instances of data source usage by organizations producing poverty and food security indicators. All MPI indicators, poverty lines, poverty gaps, and FAO food security indicators have been grouped into aggregated categories to generate this count. For example, if a data source is used to produce all four MPI indicators produced by Oxford/UNDP and all five poverty line indicators produced by the World Bank, the data source will be counted as being used by two organizations (once by Oxford/UNDP and once by World Bank), though it is used to produce nine unique indicators, which would be reflected in the second column from right. [↑](#footnote-ref-16)