

Collecting & Reporting Poverty Data:

Using the Poverty Probability Index Toolkit with IRIS

Impact investors and mission-driven businesses serving the poor require data on the poverty levels of their beneficiaries in order to measure and manage towards their intended social impact. IRIS provides standardized indicators to measure the number of poor beneficiaries served by an organization. The Poverty Probability Index (PPI®) is a tool developed to assess the poverty composition of an organization's beneficiaries. **This white paper describes how IRIS and the PPI can be used together to measure, track, and report the number of poor and very poor beneficiaries that an organization reaches.**¹

What is the Poverty Probability Index (PPI)?

The PPI is a simple and accurate tool that measures poverty at the household level. The PPI toolkit is publicly available online at www.povertyindex.org. It is currently used by almost 600 pro-poor organizations who work across a range of sectors including finance, agriculture, health and education. The PPI is a country-specific tool. Currently, PPIs are available for 44 countries², which together comprise more than 95% of the world's population which lives below the World Bank-defined extreme poverty line of \$1.90/day 2011 PPP. Each PPI consists of two components: first, a survey or "scorecard" with ten questions and 0-100 scoring system and, second, a set of "look-up tables" that indicate the probability that a household with a given score falls below a selected poverty line. For each country, a list of ten questions is selected from the country's most recent national income and expenditure survey to create the country-specific PPI survey. The questions chosen are those that are most highly correlated with expenditure below a poverty line, and are simple, objective, and non-financial in nature. These questions ask about household-level indicators that may include family size, asset ownership, number of children attending school, or housing situation.

Each response to a question is assigned points, the sum of which is the household's total PPI score. The country-specific PPI look-up table³ then indicates the probability or likelihood of a household being below one of several poverty lines based on its PPI score. Poverty lines provided for each country typically include the international poverty lines, such as the \$1.90/day 2011 PPP poverty line, and the respective national poverty lines. The variety of poverty lines provided by the PPI is intended to allow users to determine the best way to interpret PPI score results for their specific purposes.

What is IRIS?

¹ IRIS users not yet familiar with the Poverty Probability Index should browse the resources available on the website (www.povertyindex.org) to determine if the tool is appropriate to use to measure poverty levels of their beneficiaries.

² See <https://www.povertyindex.org/ppi-country> for list of countries where a PPI is available.

³ See "PPI® Scorecards +Look-Up Tables" for Zambia [here](#) for an example. Free registration required. This PPI was created in November 2017 based on data from Zambia's 2015 Living Conditions Monitoring Survey.

IRIS is a common language for organizations to use when measuring and tracking their social, environmental, and financial performance. IRIS is provided as a free public good and is available at iris.thegiin.org.

By standardizing definitions for common impact measurement terms, and surfacing which indicators are commonly reported in particular sectors, the IRIS initiative enables increased comparability and consistency in the measurement and analysis of impact performance data. Organizations can adopt IRIS by selecting a set of IRIS metrics that are applicable to their work and measuring and tracking performance data that are consistent with the IRIS definitions for those metrics.

Using the PPI and IRIS Together

IRIS specifies that organizations should use commonly recognized poverty lines as the basis for classifying beneficiaries, such as clients, as either *Poor* or *Very Poor* (see IRIS glossary terms below). IRIS also includes standardized indicators for organizations to report on the number of *Poor* and *Very Poor* clients served, [Client Individuals: Poor \(PI3193\)](#) and [Client Individuals: Very Poor \(PI9835\)](#). Values for these indicators can represent households or individuals – organizations should specify this using Client Type: Individual/Household (PD1634).

IRIS Glossary Terms

Poor: The poor are people living below a recognized poverty line. Commonly recognized poverty lines include (1) persons living below the poverty line established by the national government, or (2) persons living on less than US \$3.20 per day in daily per-capita expenditures at 2011 Purchasing Power Parity.

Very Poor: The very poor are people living below a recognized absolute extreme poverty line. Commonly recognized extreme poverty lines include (1) persons in the bottom 50% of those living below the poverty line established by the national government, (2) persons living on less than US \$1.90 per day per capita at 2011 Purchasing Power Parity (PPP), or (3) the USAID extreme poverty line, which varies by country.

Using data collected through PPI surveys to report on IRIS indicators is straightforward. The PPI score and PPI look-up table provide the statistical probability or likelihood that a household⁴ is living below a recognized poverty line. These probabilities can then be used to produce an expected value⁵ for the total number of *Poor* and *Very Poor* clients served by an organization.

For example, if an organization with 10 client households uses the PPI survey and finds that all 10 are each 50% likely to be poor, then the expected value for the number of *Poor* households is 5 (10

⁴ While questions in the PPI survey ask about a household, it is assumed that the results are applicable to all individuals within that household as well. Within a household, it is assumed that all members of the household are equally poor.

⁵ An expected value is an estimate for a value that is based on a probability.

households x 50% likelihood of being poor = 5 client households). Reporting in alignment with IRIS, the organization would report to its investors that the value of *Client Households: Poor* is 5.

The step-by-step explanation below outlines how to convert PPI survey scores to IRIS-aligned values for the number of *Poor* or *Very Poor* clients served by an organization.

<p>Step 1: Select the appropriate poverty line(s)</p> <ul style="list-style-type: none">Review the country-specific PPI look-up table. Select a poverty line from among those provided in the PPI look-up table that aligns with the IRIS glossary term of <i>Poor</i> and/or <i>Very Poor</i>. (Note: It is recommended to use the same poverty lines over time.)
<p>Step 2: Administer PPI surveys and determine clients' PPI Scores</p> <ul style="list-style-type: none">Administer the relevant country-specific PPI survey to all client households or to a representative sample using the PPI guidance.Select the composition and size of the sample to represent the target population with the desired degree of confidence⁶.Score the survey, allocate points for each response based on the poverty line selected and determine the total PPI score for each household.
<p>Step 3: Determine poverty profile of organization's client base, based on PPI Scores</p> <ul style="list-style-type: none">For each survey, identify the probability or likelihood of the respondent household being below the selected poverty line based on the country-specific PPI look-up table and the household's PPI score.Average the probabilities.⁷ (Note: If interested in calculating poverty profiles for more than one poverty line, do so separately for each poverty line of interest.)If you are reporting your number of clients as individuals and not households, then track each client individual separately and apply the household-level probability to that individual. i.e. obtain a weighted average of the household-level poverty likelihoods where the weight is the number of client individuals in each household.
<p>Step 4: Calculate the expected number of Poor and/or expected number of Very Poor clients served</p> <ul style="list-style-type: none">Multiply the average probability derived in step 3 by the number of clients (individuals or households as appropriate) that the survey sample represents⁸. The result is the expected value for the number of client individuals or households below the selected poverty line.Repeat this process for each poverty line to generate an expected value for the number of client individuals or households who are <i>Poor</i> and/or <i>Very Poor</i> as defined by IRIS glossary terms.
<p>Step 5: Round to whole numbers</p> <ul style="list-style-type: none">Round up for numbers ending in 0.50 and above; round down for numbers ending below 0.50.Report the whole numbers as the number of <i>Poor</i> and <i>Very Poor</i> clients and specify whether values refer to households or individuals on the respective IRIS indicators.

⁶ Organizations contributing data to the IRIS initiative should use a minimum confidence level of 90%.

⁷ A simple PPI Intake Tool for inputting PPI results and generating average probabilities is available at <https://www.povertyindex.org/free-tools>. PPIs released after November 2017 come with customized data analysis tools which accept survey data as input and automatically compute poverty likelihoods and rates. See [data analysis tool for Zambia's PPI](#) as an example.

⁸ In determining representativeness, consider, for example, whether the sample may be specific to a region, project, or specific product offered by the organization.

Example: A Zambian Microfinance Institution

A Zambian microfinance institution (MFI) decides to measure the poverty composition of its 1480 clients using the PPI. In addition, this MFI has received investment capital from a fund that has requested that it report this information in alignment with IRIS, using the indicators [Client Individuals: Poor \(PI3193\)](#) and [Client Individuals: Very Poor \(PI9835\)](#).

Step 1: The MFI decides to use the Zambian National Poverty Line to designate the poverty line for *Poor* clients and the \$1.00/day 2011 PPP Poverty Line for *Very Poor* clients.

Step 2: The MFI administers the Zambian PPI survey to all 1480 clients. It scores the survey. Response options to the same PPI question are allocated different points based on the poverty line used⁹. Therefore, 2 PPI scores are generated for each respondent household - One PPI score for the National Poverty Line, and another for the \$1.00/day 2011 PPP Poverty Line.

Step 3: The MFI uses the Zambia PPI look-up tables for the \$1.00/day 2011 PPP Line (see Figure 1), and the National Poverty Line (see Figure 2) to calculate the probability or likelihood of being below each of its two selected poverty lines for each respondent household.

Figure 1: 2015 Zambia PPI Look-Up Table (\$1.00/day 2011 PPP Poverty Line)

PPI Score	Poverty Likelihood (%)	PPI Score	Poverty Likelihood (%)	PPI Score	Poverty Likelihood (%)
0	91.6%	34	19.4%	68	0.5%
1	90.7%	35	17.7%	69	0.5%
2	89.7%	36	16.1%	70	0.4%
3	88.6%	37	14.7%	71	0.4%
4	87.4%	38	13.3%	72	0.3%
5	86.1%	39	12.1%	73	0.3%
6	84.7%	40	10.9%	74	0.3%
7	83.2%	41	9.9%	75	0.2%
8	81.6%	42	8.9%	76	0.2%
9	79.9%	43	8.1%	77	0.2%
10	78.0%	44	7.3%	78	0.2%
11	76.0%	45	6.5%	79	0.2%
12	73.9%	46	5.9%	80	0.1%
13	71.7%	47	5.3%	81	0.1%
14	69.4%	48	4.8%	82	0.1%
15	66.9%	49	4.3%	83	0.1%
16	64.4%	50	3.8%	84	0.1%

⁹ For PPIs released before November 2017, points allocated to response options for PPI questions do not vary by poverty line.

17	61.8%	51	3.5%	85	0.1%
18	59.1%	52	3.1%	86	0.1%
19	56.4%	53	2.8%	87	0.1%
20	53.6%	54	2.5%	88	0.1%
21	50.8%	55	2.2%	89	0.1%
22	48.0%	56	2.0%	90	0.0%
23	45.2%	57	1.8%	91	0.0%
24	42.5%	58	1.6%	92	0.0%
25	39.7%	59	1.4%	93	0.0%
26	37.1%	60	1.3%	94	0.0%
27	34.5%	61	1.2%	95	0.0%
28	32.0%	62	1.0%	96	0.0%
29	29.6%	63	0.9%	97	0.0%
30	27.4%	64	0.8%	98	0.0%
31	25.2%	65	0.7%	99	0.0%
32	23.1%	66	0.7%	100	0.0%
33	21.2%	67	0.6%		

Figure 2: 2015 Zambia PPI Look-Up Table (National Poverty Line)

PPI Score	Poverty Likelihood (%)	PPI Score	Poverty Likelihood (%)	PPI Score	Poverty Likelihood (%)
0	98.5%	34	64.1%	68	4.6%
1	98.3%	35	61.7%	69	4.2%
2	98.2%	36	59.1%	70	3.8%
3	98.0%	37	56.5%	71	3.4%
4	97.7%	38	53.9%	72	3.1%
5	97.5%	39	51.3%	73	2.8%
6	97.2%	40	48.6%	74	2.5%
7	96.9%	41	46.0%	75	2.3%
8	96.6%	42	43.4%	76	2.0%
9	96.2%	43	40.8%	77	1.8%
10	95.8%	44	38.2%	78	1.7%
11	95.3%	45	35.8%	79	1.5%
12	94.9%	46	33.4%	80	1.3%
13	94.3%	47	31.1%	81	1.2%
14	93.7%	48	28.8%	82	1.1%
15	93.1%	49	26.7%	83	1.0%
16	92.3%	50	24.7%	84	0.9%
17	91.6%	51	22.8%	85	0.8%

18	90.7%	52	21.0%	86	0.7%
19	89.8%	53	19.2%	87	0.6%
20	88.8%	54	17.7%	88	0.6%
21	87.7%	55	16.2%	89	0.5%
22	86.5%	56	14.8%	90	0.5%
23	85.2%	57	13.5%	91	0.4%
24	83.8%	58	12.3%	92	0.4%
25	82.3%	59	11.2%	93	0.3%
26	80.7%	60	10.2%	94	0.3%
27	79.0%	61	9.3%	95	0.3%
28	77.2%	62	8.4%	96	0.2%
29	75.2%	63	7.6%	97	0.2%
30	73.2%	64	6.9%	98	0.2%
31	71.1%	65	6.3%	99	0.2%
32	68.9%	66	5.7%	100	0.2%
33	66.5%	67	5.1%		

Step 4: The MFI multiplies the number of respondent households with a PPI Score with the corresponding probability of being below each poverty line (See Figure 3: In this example, Column 2: “Surveyed Households with PPI Score” is multiplied by Column 3: “Poverty Likelihood Below National Poverty Line” to calculate the number of *Poor* households. Column 2: “Surveyed Households with PPI Score” is multiplied by Column 5: “Poverty Likelihood below \$1.00/day 2011 PPP Line” to calculate the number of *Very Poor* households.)

The MFI then sums the values to get an expected value for the number of *Poor* and *Very Poor* households. In this example, these values are 724.13 and 521 respectively.

Figure 3: Zambian MFI’s Calculation of Client Poverty Makeup. Provided for illustrative purposes to demonstrate how the number of poor clients is calculated.

PPI Score (from look-up table) (1)	Surveyed Households with PPI Score below National Poverty Line (2)	Poverty Likelihood below National Poverty Line (from look-up table) (3)	Expected Value of Number of Poor Households (4)=(2)*(3)	Surveyed Households with PPI Score below \$1.00/day 2011 PPP line (5)	Poverty Likelihood below \$1.00/day 2011 PPP Line (from look-up table) (6)	Expected Value of Number of Very Poor Households (7)=(5)*(6)
0	8	98.50%	7.88	13	91.60%	11.91
1	21	98.30%	20.64	29	90.70%	26.30
2	12	98.20%	11.78	20	89.70%	17.94

3	32	98.00%	31.36	36	88.60%	31.90
4	21	97.70%	20.52	30	87.40%	26.22
5	11	97.50%	10.73	21	86.10%	18.08
6	14	97.20%	13.61	18	84.70%	15.25
7	28	96.90%	27.13	22	83.20%	18.30
8	12	96.60%	11.59	16	81.60%	13.06
9	15	96.20%	14.43	20	79.90%	15.98
10	20	95.80%	19.16	28	78.00%	21.84
11	33	95.30%	31.45	28	76.00%	21.28
12	39	94.90%	37.01	45	73.90%	33.26
13	27	94.30%	25.46	32	71.70%	22.94
14	16	93.70%	14.99	19	69.40%	13.19
15	9	93.10%	8.38	11	66.90%	7.36
16	17	92.30%	15.69	21	64.40%	13.52
17	8	91.60%	7.33	10	61.80%	6.18
18	31	90.70%	28.12	36	59.10%	21.28
19	38	89.80%	34.12	46	56.40%	25.94
20	9	88.80%	7.99	15	53.60%	8.04
21	19	87.70%	16.66	22	50.80%	11.18
22	22	86.50%	19.03	26	48.00%	12.48
23	6	85.20%	5.11	9	45.20%	4.07
24	10	83.80%	8.38	14	42.50%	5.95
25	33	82.30%	27.16	36	39.70%	14.29
26	5	80.70%	4.04	10	37.10%	3.71
27	13	79.00%	10.27	18	34.50%	6.21
28	10	77.20%	7.72	14	32.00%	4.48
29	11	75.20%	8.27	18	29.60%	5.33
30	22	73.20%	16.10	25	27.40%	6.85
31	16	71.10%	11.38	20	25.20%	5.04
32	31	68.90%	21.36	34	23.10%	7.85
33	2	66.50%	1.33	10	21.20%	2.12
34	8	64.10%	5.13	15	19.40%	2.91
35	20	61.70%	12.34	29	17.70%	5.13
36	13	59.10%	7.68	17	16.10%	2.74
37	21	56.50%	11.87	25	14.70%	3.68
38	24	53.90%	12.94	28	13.30%	3.72
39	9	51.30%	4.62	12	12.10%	1.45
40	8	48.60%	3.89	10	10.90%	1.09
41	12	46.00%	5.52	15	9.90%	1.49
42	23	43.40%	9.98	25	8.90%	2.23
43	31	40.80%	12.65	39	8.10%	3.16

44	37	38.20%	14.13	40	7.30%	2.92
45	21	35.80%	7.52	22	6.50%	1.43
46	6	33.40%	2.00	8	5.90%	0.47
47	17	31.10%	5.29	20	5.30%	1.06
48	22	28.80%	6.34	27	4.80%	1.30
49	9	26.70%	2.40	14	4.30%	0.60
50	33	24.70%	8.15	38	3.80%	1.44
51	6	22.80%	1.37	11	3.50%	0.39
52	14	21.00%	2.94	15	3.10%	0.47
53	28	19.20%	5.38	32	2.80%	0.90
54	10	17.70%	1.77	15	2.50%	0.38
55	5	16.20%	0.81	10	2.20%	0.22
56	1	14.80%	0.15	8	2.00%	0.16
57	15	13.50%	2.03	16	1.80%	0.29
58	18	12.30%	2.21	20	1.60%	0.32
59	29	11.20%	3.25	30	1.40%	0.42
60	30	10.20%	3.06	30	1.30%	0.39
61	11	9.30%	1.02	14	1.20%	0.17
62	9	8.40%	0.76	9	1.00%	0.09
63	16	7.60%	1.22	16	0.90%	0.14
64	18	6.90%	1.24	18	0.80%	0.14
65	4	6.30%	0.25	5	0.70%	0.04
66	14	5.70%	0.80	15	0.70%	0.11
67	31	5.10%	1.58	14	0.60%	0.08
68	28	4.60%	1.29	17	0.50%	0.09
69	3	4.20%	0.13	3	0.50%	0.02
70	10	3.80%	0.38	6	0.40%	0.02
71	12	3.40%	0.41	5	0.40%	0.02
72	23	3.10%	0.71	4	0.30%	0.01
73	14	2.80%	0.39	1	0.30%	0.00
74	6	2.50%	0.15	1	0.30%	0.00
75	17	2.30%	0.39	2	0.20%	0.00
76	9	2.00%	0.18	1	0.20%	0.00
77	10	1.80%	0.18	4	0.20%	0.01
78	8	1.70%	0.14	1	0.20%	0.00
79	15	1.50%	0.23	1	0.20%	0.00
80	6	1.30%	0.08	0	0.10%	0.00
81	17	1.20%	0.20	0	0.10%	0.00
82	22	1.10%	0.24	0	0.10%	0.00
83	21	1.00%	0.21	0	0.10%	0.00
84	3	0.90%	0.03	0	0.10%	0.00

85	11	0.80%	0.09	0	0.10%	0.00
86	6	0.70%	0.04	0	0.10%	0.00
87	8	0.60%	0.05	0	0.10%	0.00
88	10	0.60%	0.06	0	0.10%	0.00
89	5	0.50%	0.03	0	0.10%	0.00
90	3	0.50%	0.02	0	0.00%	0.00
91	8	0.40%	0.03	0	0.00%	0.00
92	6	0.40%	0.02	0	0.00%	0.00
93	4	0.30%	0.01	0	0.00%	0.00
94	1	0.30%	0.00	0	0.00%	0.00
95	0	0.30%	0.00	0	0.00%	0.00
96	0	0.20%	0.00	0	0.00%	0.00
97	0	0.20%	0.00	0	0.00%	0.00
98	0	0.20%	0.00	0	0.00%	0.00
99	0	0.20%	0.00	0	0.00%	0.00
100	0	0.20%	0.00	0	0.00%	0.00
Expected values	1480		724.13	1480		521.00

Step 5: The MFI rounds these numbers to 724 and 521. The MFI tracks its clients as individuals and has only one client per household. Therefore, each survey represents the response of one client and no adjustment is needed.

Based on this exercise, the MFI determines that, when reporting using the IRIS indicators, of the 1480 clients they serve, 724 are *Poor*. Of the 724 *Poor* clients, 521 are also considered *Very Poor*. The table below demonstrates how the MFI would report these findings using IRIS.

Client Individuals (PI4060) Number of individuals or households who were <i>clients</i> during the <i>reporting period</i> .	1480
Client Individuals: Poor (PI3193) Number of <i>poor</i> individuals or households who were <i>clients</i> during the <i>reporting period</i> .	724
Client Individuals: Very Poor (PI9835) Number of <i>very poor</i> individuals or households who were <i>clients</i> during the <i>reporting period</i> .	521
Client Type: Individual/Household (PD1634) The level at which the organization tracks information about its clients. Choose one: -Individual -Household	Individual

Conclusion

Alleviating poverty and supporting livelihood improvements for people at the base of the economic pyramid is an objective of many impact investors and mission-driven organizations. Measuring and tracking beneficiaries' poverty levels can help these investors and organizations understand progress towards this objective.

The PPI toolkit's simplicity, while limiting its coverage of poverty's multiple dimensions to economic poverty, will be helpful to many investors and organizations because it offers a cost-effective and consistent approach to tracking beneficiary poverty levels. This white paper has demonstrated how to align information on the poverty levels of individuals and households gathered using the PPI toolkit to IRIS.