Measuring Poverty with the PPI

TOPS / FSN Network Knowledge Sharing Meeting

Grameen Foundation

Julie Peachey

January 28, 2016

PROGRESS out of POVERTY ®

A Grameen Foundation Product

Session Agenda

- Welcome and Session Objectives
- Introductions
- History and Overview of the PPI
- PPI Use Cases and Examples
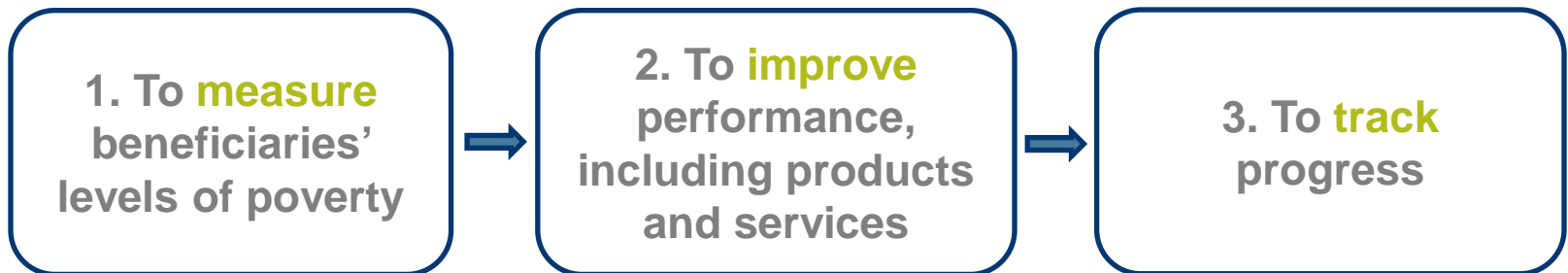- Small Group Reflection
- Q&A / Discussion

Objectives

1) Create awareness and interest in the PPI

2) Develop participants' understanding of how the PPI works and its advantages

3) Brainstorm how food security projects could benefit from incorporating the PPI into M&E frameworks

Overview of the PPI

Lifting People Out of Poverty Requires Measuring Poverty

▶ Lifting people out of poverty requires knowing who is actually poor

▶ Our global goals for sustainable development require a robust understanding of where and how the poorest of society live

▶ If you want to be accountable to a mission that reaches the poor, the PPI is a widely-available, low-cost, transparent tool to do that, across three dimensions:

| 1. To **measure** beneficiaries' levels of poverty	2. To **improve** performance, including products and services	3. To **track** progress

What is the PPI?

- A statistically rigorous yet easy-to-administer poverty measurement tool

- Statistical methodology designed and conducted by Mark Schreiner of Microfinance Risk Management, L.L.C.

- 10 questions and a scoring system

- Provides likelihood that the survey respondent's household is living below poverty line

- Calibrated to national and international poverty lines

- Public good, available for download at www.progressoutofpoverty.org

:

BELOW POVERTY LINE   **ABOVE POVERTY LINE**

Progress out of Poverty Index® (PPI®) for Colombia

Indicator	Value	Points
1. How many household members are 18-years-old or younger?	A. Four or more	0
		5
	B. Three	11
	C. Two	17
	D. One	23
	E. None	0
2. What is the highest educational level reached by the female head/spouse?	A. None, or pre-school	3
	B. Primary or middle school	6
	C. High school	8
	D. No female head/spouse	9
	E. Post-secondary or college (1 to 4 years)	17
	F. Post-secondary or college (5 years or more)	0
3. How many household members spent most of the past week working?	A. None	9
	B. One	14
	C. Two or more	

PPI Score	USAID Extreme (%)	$1.25 2005 PPP (%)	$2.50 2005 PPP (%)	$3.75 2005 PPP (%)	$5.00 2005 PPP (%)
0-4	100.0	81.1	100.0	100.0	100.0
5-9	89.8	71.6	97.7	99.1	99.9
10-14	84.0	64.4	93.8	97.6	98.7
15-19	68.9	45.7	87.9	97.1	99.2
20-24	58.0	33.7	74.0	91.5	97.2
25-29	47.1	24.7	60.7	83.1	92.4
30-34	34.2	15.9	42.6	69.6	82.9
35-39	21.9	8.9	26.7	51.2	69.0
40-44	13.6	6.1	16.8	35.0	52.2
45-49	7.5	3.2	9.1	20.0	35.2
50-54	3.9	1.3	3.6	8.8	18.7
55-59	2.5	0.8	2.1	4.4	10.2
60-64	1.4	0.5	1.1	2.5	5.3
65-69	0.6	0.1	0.4	0.9	2.3
70-74	0.3	0.1	0.3	0.6	1.1
75-79	0.1	0.0	0.1	0.2	0.7
80-84	0.3	0.1	0.3	0.4	0.5
85-89	0.0	0.0	0.0	0.0	0.1
90-94	0.0	0.0	0.0	0.0	0.0
95-100	0.0	0.0	0.0	0.0	0.0

Source: Microfinance Risk Management, L.L.C. Based on Colombia's 2009 Encuesta Integrada de Hogares.

score: 30
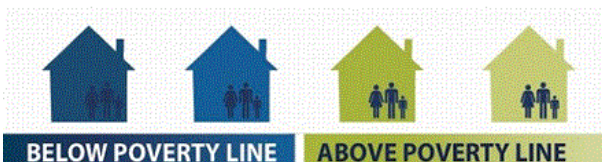
Watch an introduction to the PPI here

PPI Has Been Developed Over 10 Years

▶ In 2005, Grameen Foundation commissioned the development of the Progress out of Poverty Index® (PPI®) with the support of the Consultative Group to Assist the Poor (CGAP) and Ford Foundation.

▶ The goal was to create an easy-to-use poverty measurement tool for microfinance institutions, understanding that these institutions need reliable poverty data to manage their social performance.

▶ Mark Schreiner's simple poverty scorecard resonated with Grameen Foundation because of the characteristics it shares with the Grameen Bank's 10 Indicators for evaluating the poverty level of its borrowers.

The PPI's Global Reach Covers 90% of the World's Poor

- Available in 60 countries, covering >90% of the world's population living below $1.25/day
- PPI's website attracts 24,000 visitors annually with 1,000 document downloads per month
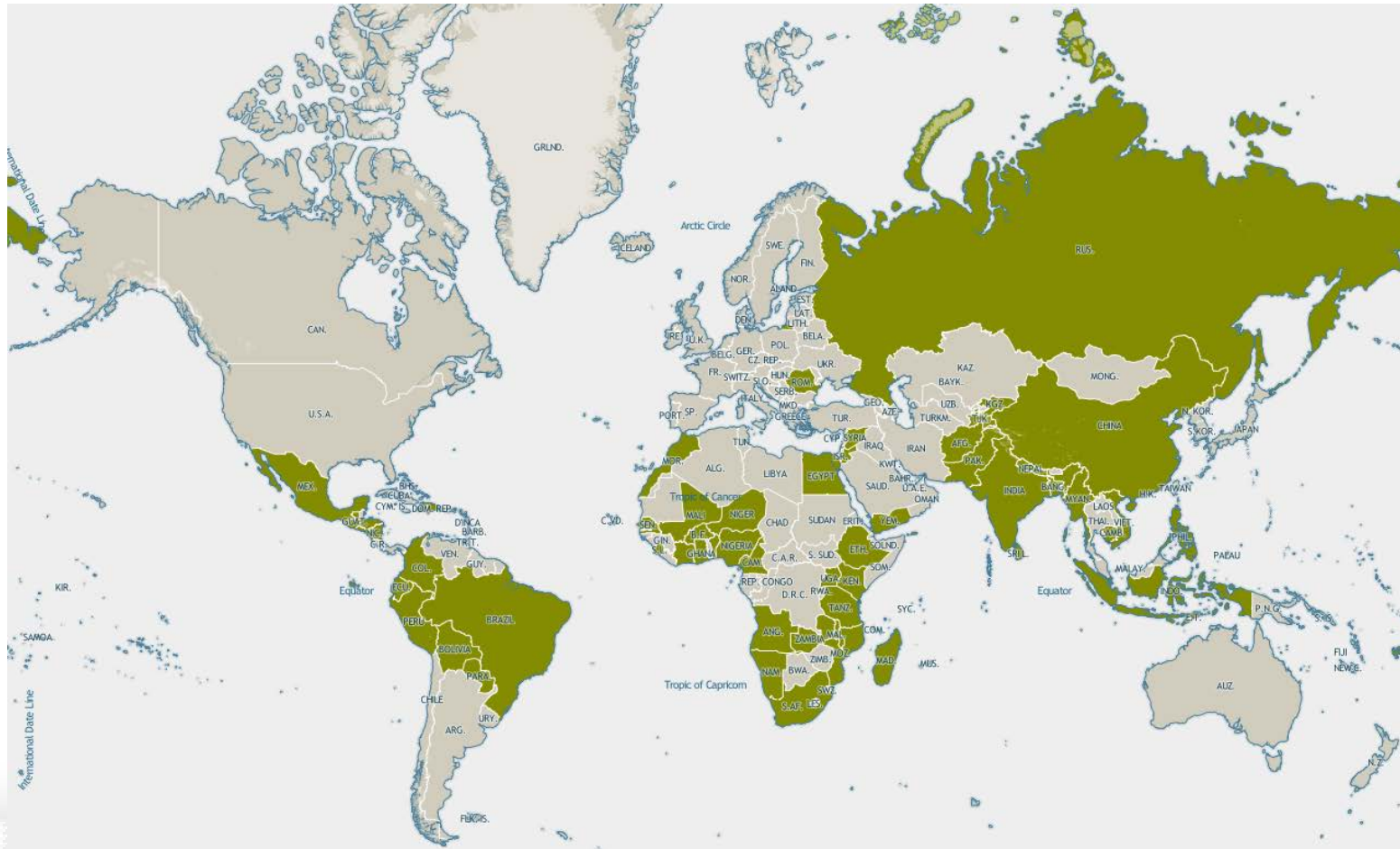
The PPI has Become a Global Standard for Development

More than 400 organizations and companies in development use the PPI for measuring poverty.

It has been incorporated into many impact investing and sector-specific measurement frameworks.

PPI Documents Include Multiple Components

10-question PPI scorecard

Look-Up Table

Guide to interpreting indicators

Back-Page Worksheet

Design Documentation

Documents published on PPI country page - http://progressoutofpoverty.org/country

Using the PPI Scorecard

Indicators Client Response Points

Indicator	Possible response	Points	Total
1. How many people aged 0 to 17 are in the household?	Five or more	0	8
	Four	4	
	Three	8	
	Two	13	
	One	20	
	None	27	
2. What is the household's principal occupation?	A. Labourers (agricultural, plantation, other farm), hunters, tobacco preparers and tobacco product makers, and other labourers	0	0
	B. Others	8	
	C. Professionals, technicians, clerks, administrators, managers, executives, directors, supervisors, and teachers	14	

Using the PPI: PPI Scorecard

Indicator	Possible response	Points	Total
1. How many people aged 0 to 17 are in the household?	Five or more	0	8
	Four	4	
	(Three)	8	
	Two	13	
	One	20	
	None	27	
2. What is the household's principal occupation?	A. Labourers (agricultural, plantation, other farm), hunters, tobacco preparers and tobacco product makers, and other labourers	0	0
	B. Others	8	
	C. Professionals, technicians, clerks, administrators, managers, executives, directors, supervisors, and teachers	14	
3. Is the residence all pucca (burnt bricks, stone, cement, concrete, jackboard/cement-plastered reeds, timber, tiles, galvanised tin or asbestos cement sheets)?	A. No	0	4
	B. Yes	4	
4. What is the household's primary source of energy for cooking?	A. Firewood and chips, charcoal, or none	0	5
	B. Others	5	
	C. LPG	17	
5. Does the household own a television?	A. No	0	6
	B. Yes	6	
6. Does the household own a bicycle, scooter, or motor cycle?	A. No	0	0
	B. Yes	5	
7. Does the household own a almirah/dressing table?	A. No	0	3
	B. Yes	3	
8. Does the household own a sewing machine?	A. No	0	0
	B. Yes	6	
9. How many pressure cookers or pressure pans does the household own?	A. None	0	0
	B. One	5	
	C. Two or more	9	
10. How many electric fans does the household own?	A. None	0	5
	B. One	5	
	C. Two or more	9	
		Total:	31

Progress out of Poverty Index®

PPI Score

12

Using the PPI: Look-up Table

PPI Score	Total Below National Poverty Line
0-4	99.3%
5-9	92.5%
10-14	91.9%
15-19	93.4%
20-24	77.6%
25-29	76.8%
30-34	77.8%
35-39	48.6%
40-44	48.3%
45-49	33.6%
50-54	34.4%
55-59	22.6%
60-64	10.1%
65-69	10.1%
70-74	6.9%
75-79	3.8%
80-84	2.1%
85-89	0.0%
90-94	0.0%
95-100	0.0%

Estimating a household's poverty likelihood:

With a score of 31, a household has a 77.8% likelihood of falling below the national poverty line.

Calculating a Group's Poverty Rate

Client ID	Poverty Likelihood
Household 1	39%
Household 2	48%
Household 3	23%
Household 4	55%
Household 5	21%
Household 6	44%
Household 7	63%
Household 8	12%
Household 9	22%
Household 10	48%
Group Poverty Rate	**38%**

Average of poverty likelihoods of all ten households

Individual poverty likelihoods of surveyed households are averaged to obtain the group's poverty rate. Watch how to calculate poverty rates using the PPI here.

Interpreting the PPI

n=1 (household)   **PPI Score = 31**

Poverty Likelihood = 77.8%

Probability

▶ There is a 77.8% likelihood (or probability) that the household falls below the national poverty line.

n=1000 (group)   **PPI Scores = Vary**

Avg. of Poverty Likelihoods = 66.3%

Poverty rate
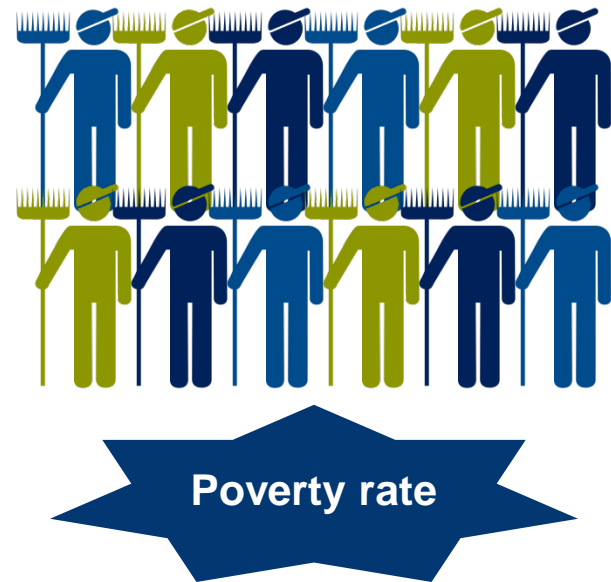
▶ In this group, 663 households live below the national poverty line.

Free Learning Resources

Standards of Use
Checklist of best practices to ensure PPI data remains accurate and relevant

Piloting and implementing the PPI
Practical advice and instructions for new PPI users.

Data Management and Analysis
Resources to compute and interpret poverty data

PPI Trainer Toolkit
For trainers educating others on the use of the PPI

Case Studies and Reports
Studies on how various organizations have used the PPI

What other options for poverty measurement exist?

- Average loan size, as proxy [microfinance]
- Bespoke tool by organization or government department
- World Bank **Proxy Means Tests**
- Oxford's **Multidimensional Poverty Index**
  - "An international measure of acute poverty covering over 100 developing countries. It complements traditional income-based poverty measures by capturing the severe deprivations that each person faces at the same time with respect to education, health and living standards."
- **Wealth Index** Quintiles – new Equity Tool
  - A twenty-question client interview that uses asset/household indicators from DHS surveys to place clients in a wealth quintile distribution.
- USAID **Poverty Assessment Tool [PAT]**
  - "A 10-25 question, country-specific household survey—administered in twenty minutes or less—and a data entry template. Using such a tool, an implementing partner can gain an accurate estimate of the share of its beneficiaries who are very poor."
- Fundacion Paraguaya **Poverty Stoplight**
  - "A visual survey which uses a series of photographs, families self-assess their level of poverty in 50 indicators grouped into 6 dimensions of poverty. Each indicator is defined as Red (extreme poverty), Yellow (poverty) or Green (not poverty)."

Advantages of the PPI

- ✓ Objective
- ✓ Simple and cost-effective
- ✓ Consumption-based approach [widely accepted]
- ✓ Country-specific, based on national survey data
- ✓ Results specific to people being served
- ✓ Results expressed in terms of multiple poverty lines – national and international
- ✓ Comparable results
- ✓ Accuracy/precision is known
- ✓ Thoroughly documented; fully transparent
- ✓ Can be used to measure change over time

Examples of PPI Use

Three Primary PPI Use Cases

1. To measure beneficiaries' levels of poverty	**2. To improve** performance, including products and services	**3. To track** progress

Are the profiles of beneficiaries served in line with mission / objectives? Have we hit the target population we wanted?

Can products or services be modified or developed to better serve particular beneficiaries?
- Benchmarking
- Segmentation
- Targeting

How do poverty rates change over time?

Measuring / Validating Poverty Outreach

% Pride MDI clients likely to be below selected poverty lines across pilot branches
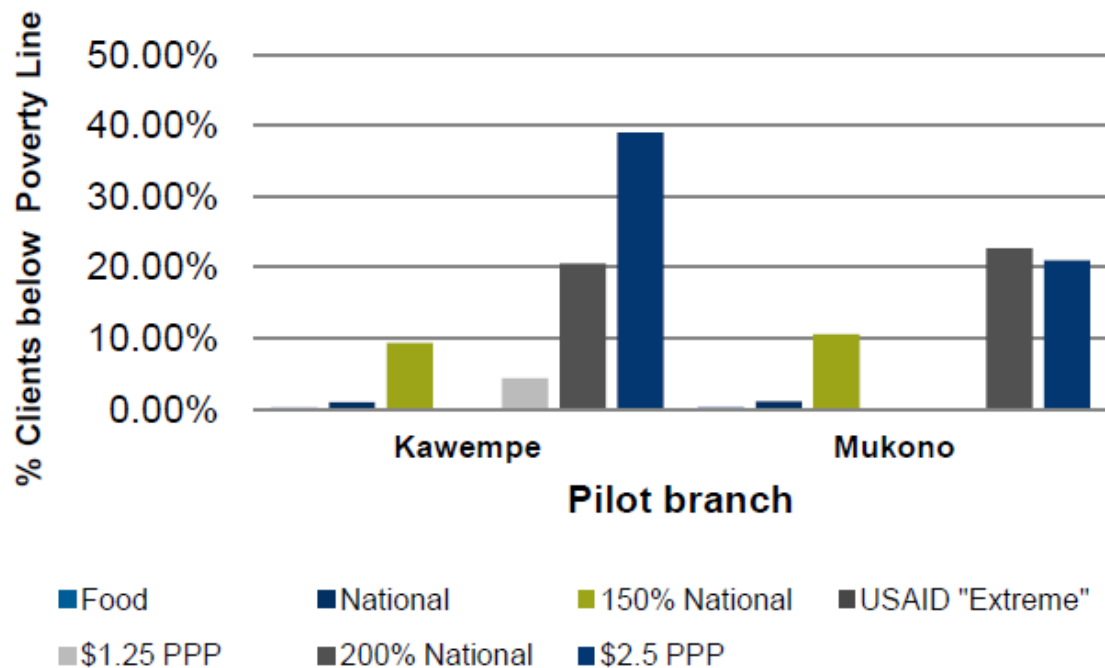
Less than 2% of the organization's clients were below the National Poverty Line.

They had a target of reaching 20% below NPL.

Validating Program Targeting

All MSI clients

Living below $2.50 a day

Living below $1.25 a day
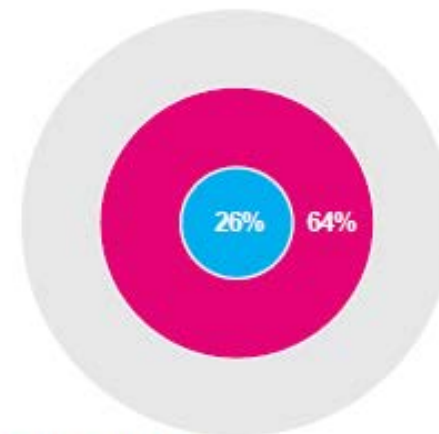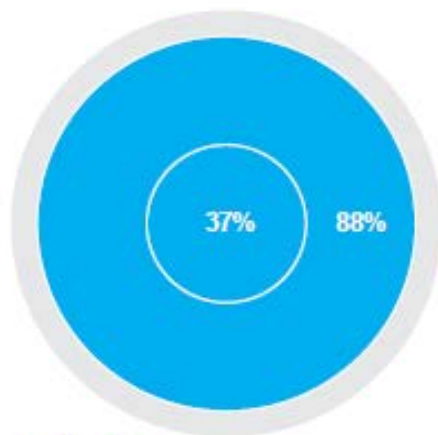
MSI clients are poorer on average than the national population

MSI clients are of similar poverty level to the national population

MSI clients are less poor on average than the national population

Ghana — 17% · 52%

Philippines — 26% · 64%

Ethiopia — 37% · 88%

Cambodia — 39% · 81%
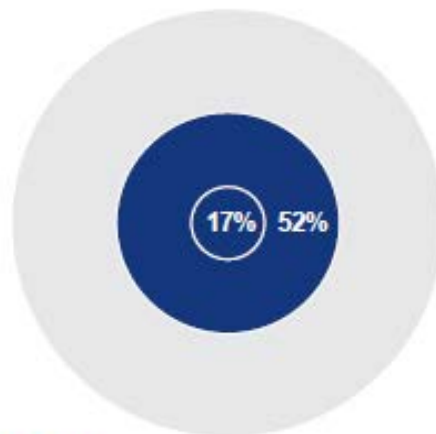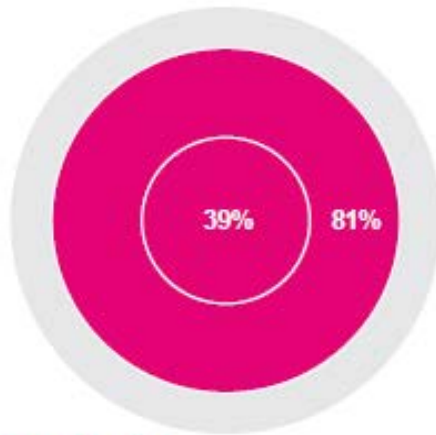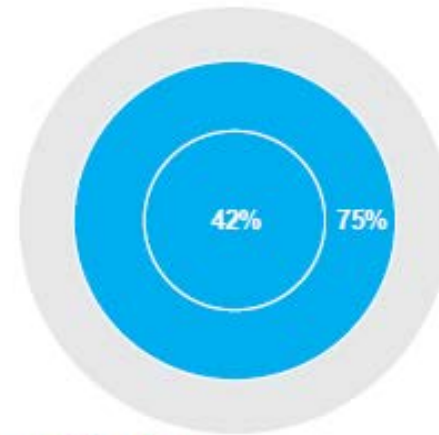
Burkina Faso — 42% · 75%

Targeting, Screening, Impact Assessment
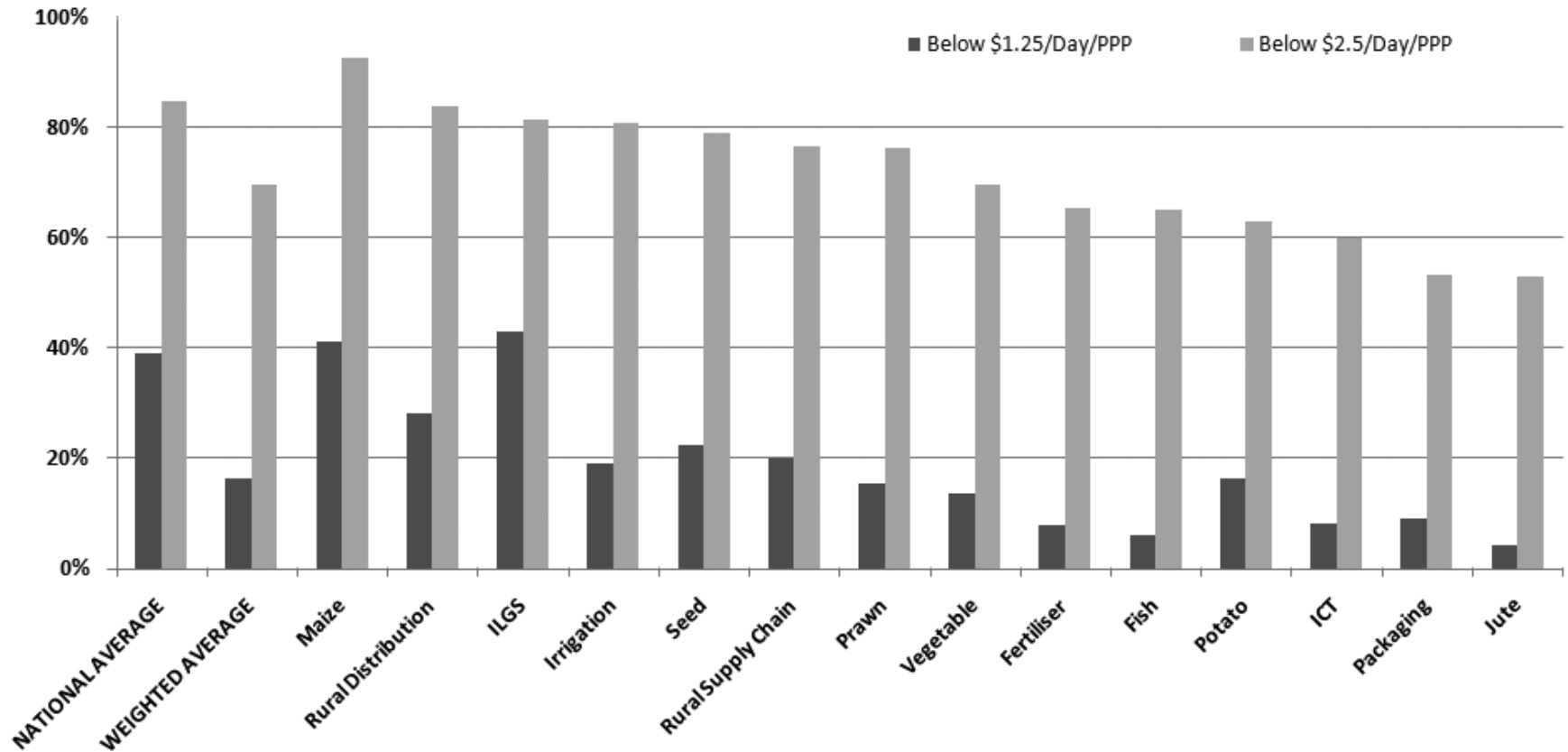
Measuring Change Over Time

FIGURE 3. CHANGE IN POVERTY RATES AMONG MFI 2 CLIENTS FROM FIRST TO FOURTH PPI SCORE
COLLECTION FROM 2010 TO 2013

Change in Poverty Rate by PPI Collection Date
from 2010 to 2013
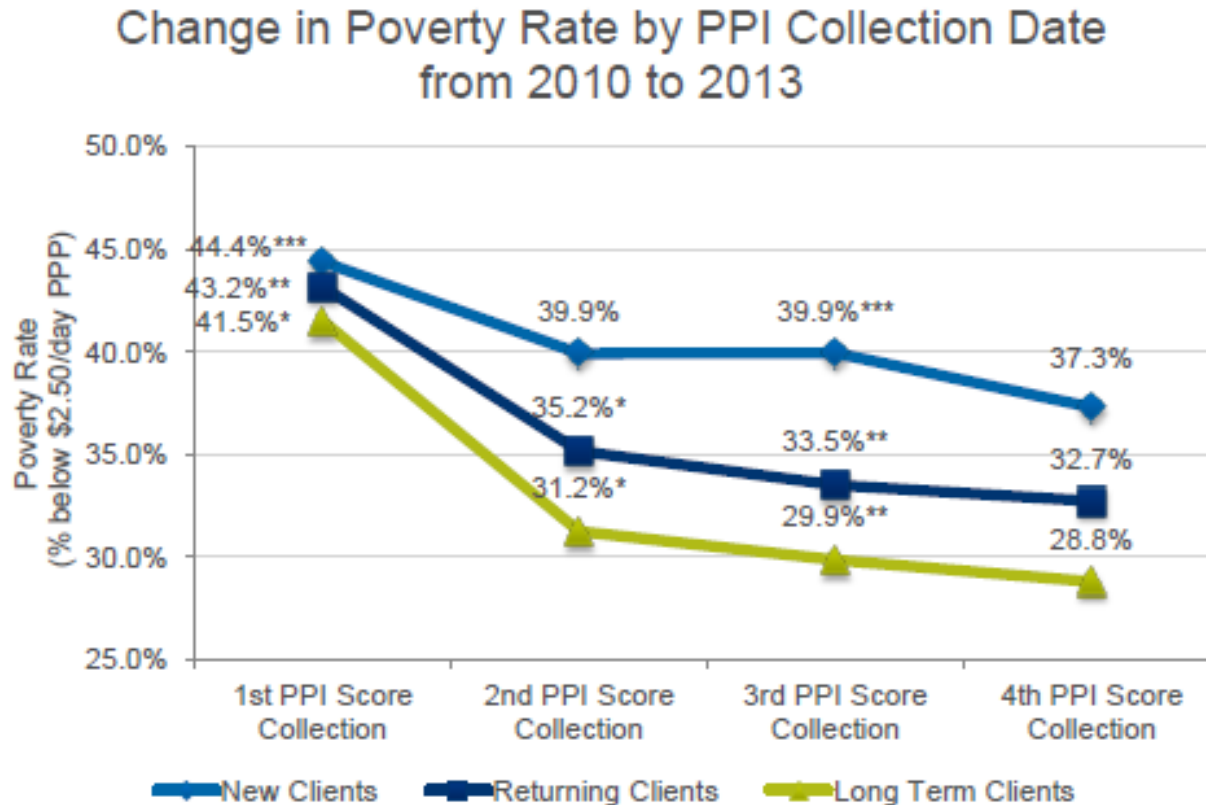
All three groups of clients show an improvement in poverty
status [decrease in poverty rate] over time.

Tracking Poverty Over Time

Clients in the Philippines show reduced likelihood of poverty over time

Year	Percentage
2010	31%
2011	25%
2012	21%
2013	21%
2014	16%
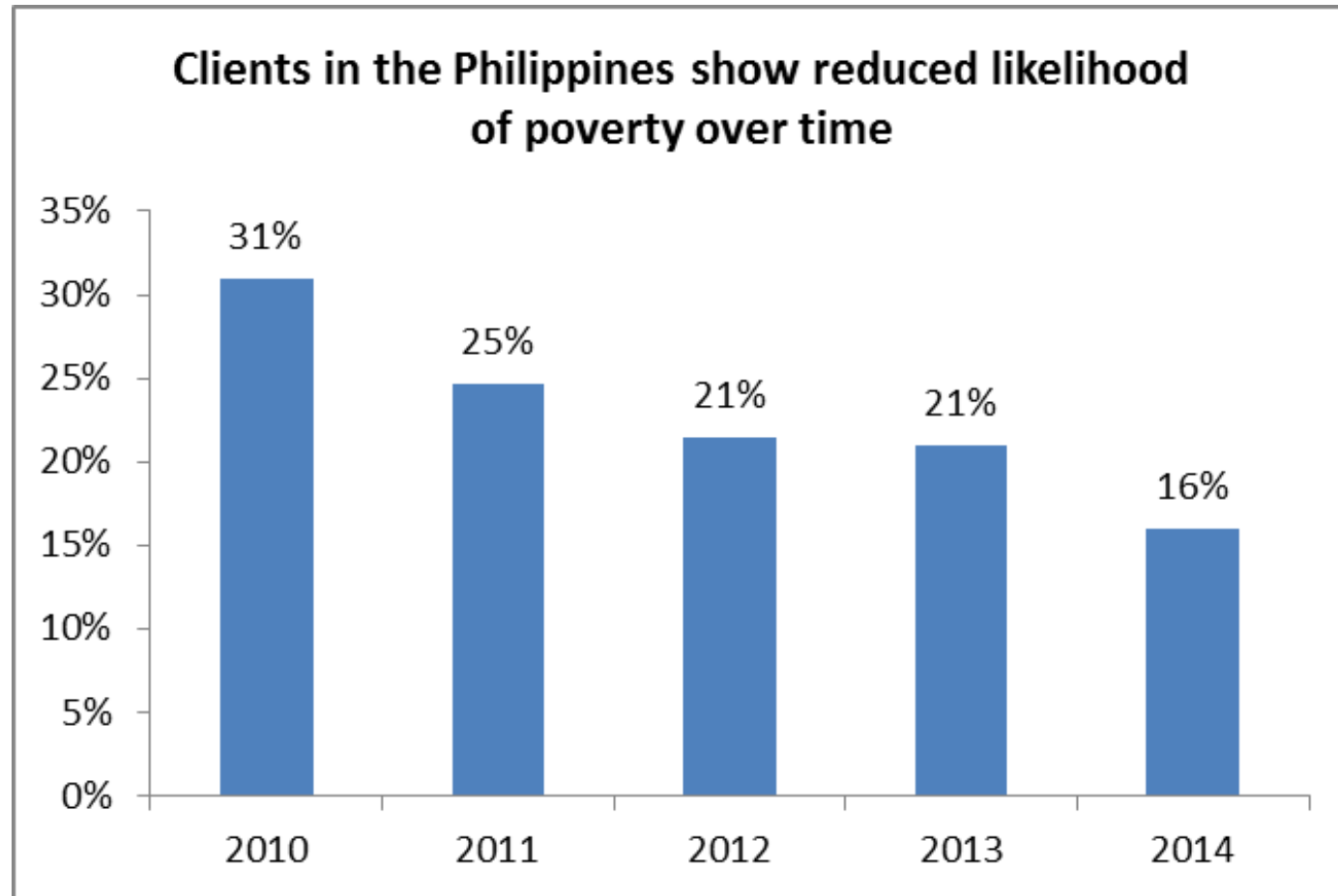
Small Group Reflection

Questions for Discussion

▶ How is poverty measured in your program?

- Prevalence of Poverty
- Depth of Poverty

▶ How could PPI be used in your program?

- As a supplement to required poverty indicators?

▶ What challenges would you foresee in using the PPI?

▶ What advantages?

Learn more at *www.progressoutofpoverty.org*
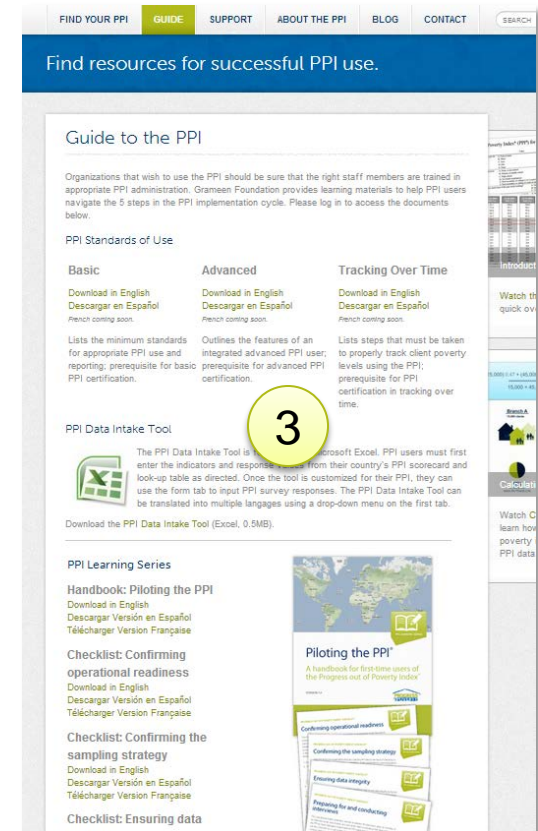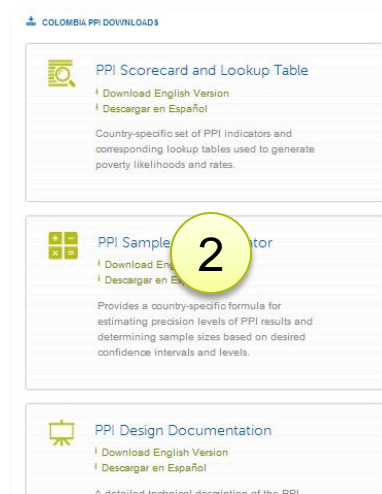
1. **Find the PPI for your country.**

2. **Download PPI documents.**

3. **Download learning materials.**

Get help from PPI Specialists via the PPI Help Desk

Also available: case studies, blog, instructional videos, and more.

Thank you!

Julie Peachey

Sr Director, Social Performance Management

jpeachey@grameenfoundation.org

EXTRA

60 Country-specific PPIs

- Afghanistan
- Angola
- Bangladesh
- Benin
- Bolivia
- Brazil
- Burkina Faso
- Cambodia
- Cameroon
- China*
- Colombia
- Côte d'Ivoire
- Dominican Republic
- Ecuador
- Egypt

- El Salvador
- Ethiopia
- Fiji
- Ghana
- Guatemala
- Haiti
- Honduras
- India
- Indonesia
- Jordan
- Kenya
- Kyrgz Republic
- Madagascar
- Malawi
- Mali
- Mexico

- Mongolia**
- Morocco
- Mozambique
- Myanmar
- Namibia
- Nepal
- Nicaragua
- Niger
- Nigeria
- Pakistan
- Palestine
- Paraguay
- Peru
- Philippines
- Romania
- Russia

- Rwanda
- Senegal
- Sierra Leone
- South Africa
- Sri Lanka
- Syria
- Tajikistan
- Tanzania
- Timor-Leste
- Uganda
- Vietnam
- Yemen
- Zambia

*China has an expert-based poverty scorecard in place of a PPI.
**Coming Spring 2016

How is a PPI scorecard constructed?

▶ Logit regression with data from national survey

▶ In survey, consumption poverty status is known

▶ Use statistics (and judgment) to select indicators, group responses, and derive points to reflect link between indicators and poverty status

▶ Total points (scores) range from 0 (most likely below poverty line) to 100 (least likely below line)

▶ Final scorecard balances goals with constraints of data, statistics, and user acceptance

▶ 'Flat max' in predictive models mean we can focus on acceptability without sacrificing accuracy

PPI Development Process

Time taken		Responsibility
	Acquire Data	
Varies		Mark Schreiner
2-3 weeks	Draft PPI Indicators	Mark Schreiner
2 weeks	Review Indicators	PPI Team/ local partners
6-8 weeks	Field Test Indicators	PPI Team/ local partners
2-3 weeks	Develop Materials	Mark Schreiner
1 day	Publish and launch	PPI team
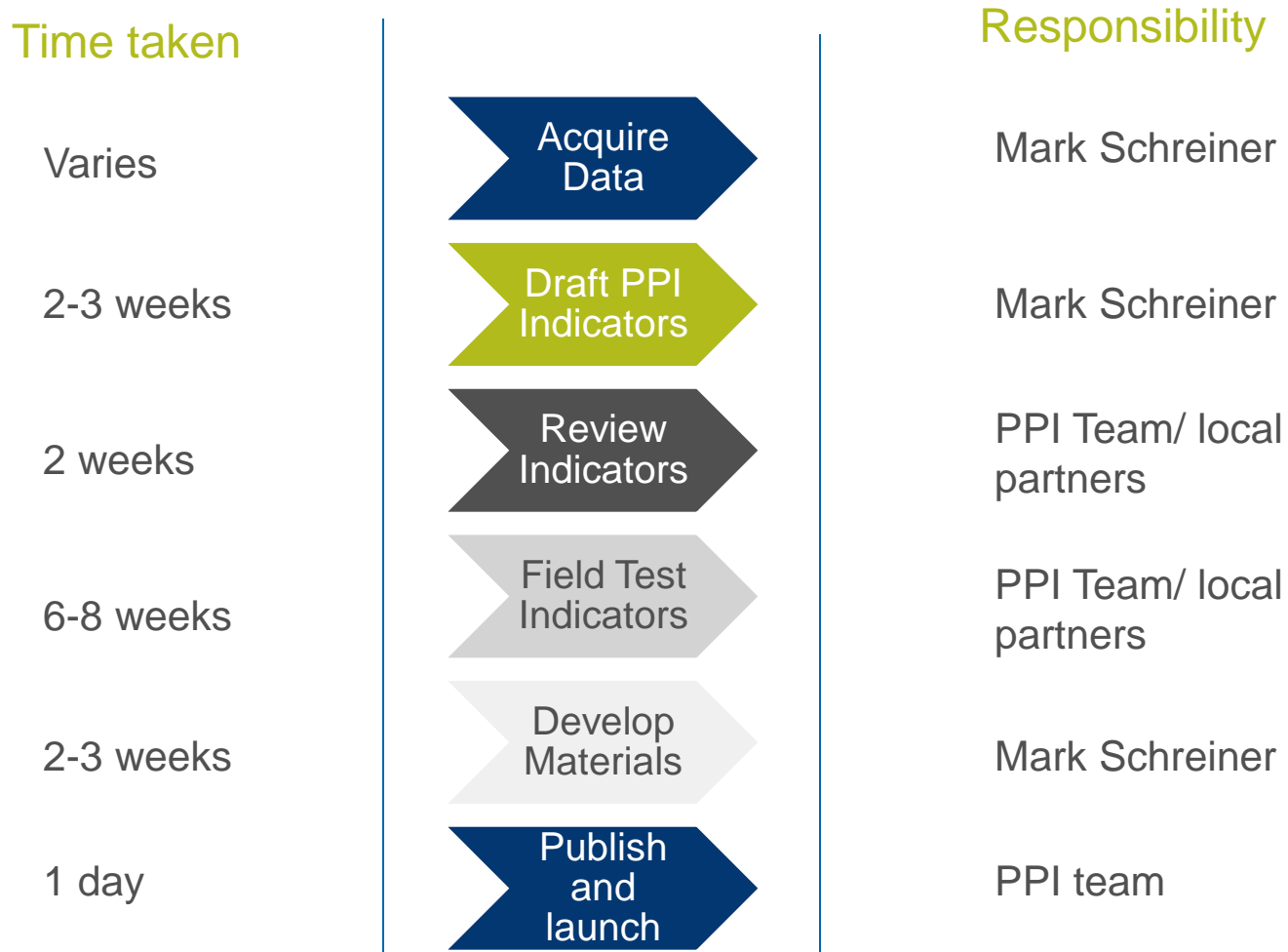
It usually takes 3 to 4 months to build or update a PPI. PPIs are prioritized based on demand, availability of funding and an adequate data set.
View our video on the PPI Development Process here.

Data Acquisition

National Household Expenditure or Income Survey

Obtained from NSO, World Bank, other sources

Provides data in these areas:

- Household Expenditure
- Housing
- Education

- Household Composition
- Ownership of durable goods
- Employment status

Selecting Potential Indicators

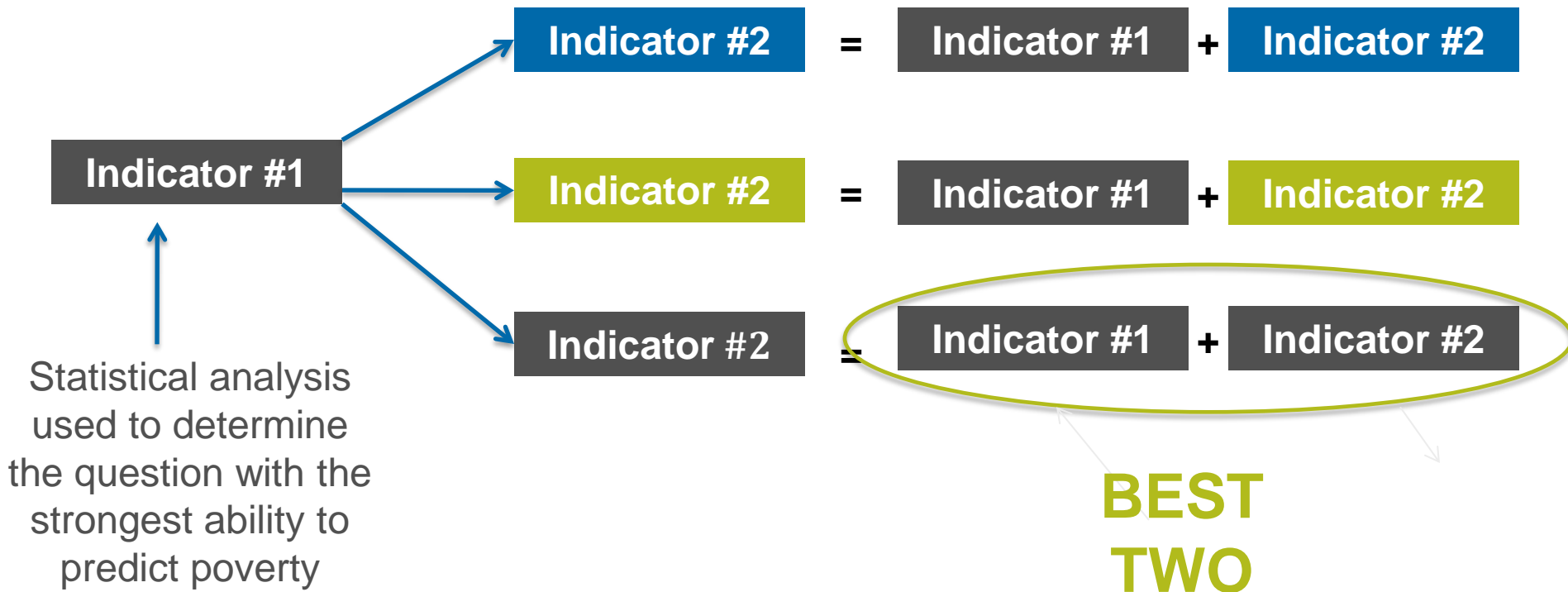We find the indicators which have the highest degree of correlation with poverty

The top indicators are assessed and kept for further review if they are:

- ▶ Inexpensive to collect
- ▶ Simple to verify
- ▶ Easy to answer quickly
- ▶ Liable to change over time as poverty status changes

Building the PPI Scorecard

Statistical analysis used to determine the best two questions that **TOGETHER** strongly predict poverty

| Indicator #1 | | Indicator #2 | = | Indicator #1 | + | Indicator #2 |

Statistical analysis used to determine the question with the strongest ability to predict poverty

Indicator #2 = **Indicator #1** + **Indicator #2**

Indicator #2 = **Indicator #1** + **Indicator #2**

Indicator #2 = **Indicator #1** + **Indicator #2**

BEST TWO

Indicators are LINKED and should be ANALYZED as a GROUP

Testing Indicators In The Field

Between 15 and 20 indicators are reviewed by users and tested in the field.

- ▶ Potential indicators are virtually reviewed by local and global stakeholders
- ▶ Potential indicators are tested in the field

Relevant?
Culturally acceptable?
Easy to Answer?
Easy to verify?

TEST PPI

Question 1

Question 2

Question 3

Question 4

Question 5

Question 6

Question 7

Question 8

Question 9

Question 10

Question 11

Question 12

Finalizing The PPI Scorecard and Look-up Table

- Balancing feedback and statistics, the final 10 indicators are derived.

- Points are statistically calculated for each response option

- To create the look-up table, the poverty rate for a set of score ranges is calculated using the original national survey data

PPI Score	$1.25/day 2005 PPP	$2.00/day 2005 PPP	$2.50/day 2005 PPP	$5.00/day 2005 PPP	$8.44/day 2005 PPP
0 - 4	100.0	100.0	100.0	100.0	100.0
5 - 9	75.9	96.8	97.6	100.0	100.0
10 - 14	67.3	77.3	83.9	100.0	100.0
15 - 19	50.9	64.1	76.6	91.1	100.0
20 - 24	36.4	53.9	63.3	84.9	94.4
25 - 29	24.0	38.4	56.4	84.5	94.4
30 - 34	13.6	22.9	36.5	81.5	94.4
35 - 39	7.3	16.2	25.7	67.3	90.5
40 - 44	4.8	14.1	18.8	57.6	83.0
45 - 49	3.7	11.5	15.9	47.4	78.3
50 - 54	2.0	4.7	8.5	40.0	72.7
55 - 59	2.0	4.3	6.7	35.3	69.3
60 - 64	1.5	2.8	4.4	23.7	55.4
65 - 69	1.4	2.2	3.4	15.8	44.4
70 - 74	1.4	2.2	3.4	12.3	36.3
75 - 79	1.4	2.0	2.9	7.2	23.0
80 - 84	0.6	0.6	0.6	2.1	16.4
85 - 89	0.0	0.0	0.0	1.7	10.7
90 - 94	0.0	0.0	0.0	0.0	3.0
95 - 100	0.0	0.0	0.0	0.0	0.0

Benchmarking Poverty Outreach

R2R Member Poverty Rates vs. Country and Provincial Poverty Rates
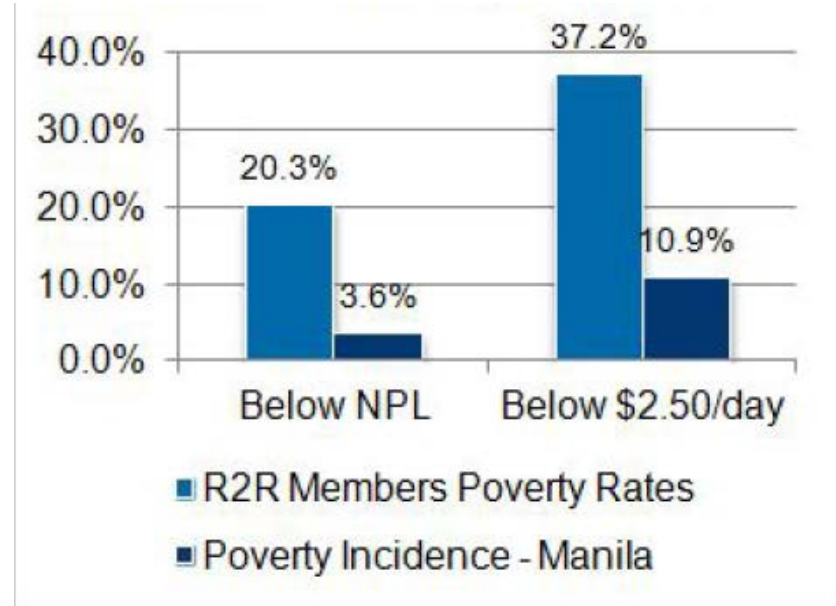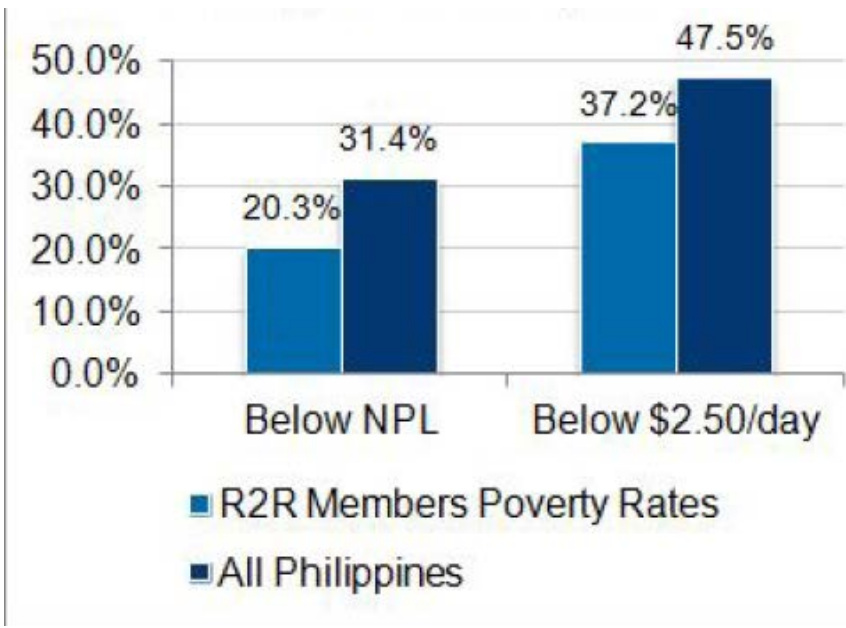
R2R Members' poverty rate (20.3%) at the National Poverty Line is lower than that for the Philippines (31.4%). However, it is higher than that for Metro Manila (3.6%).

View our guide to benchmarking poverty data here