The PPI® Manual

A Comprehensive Manual on Using the Progress out of Poverty Index®

Published by Grameen Foundation

About this Document

This manual seeks to provide all essential information on proper PPI piloting, implementation, and data analysis. Following the instructions and recommendations in this manual should result in accurate and reliable PPI data.

This document is open for public comment.

This is the first release of the PPI Manual. Grameen Foundation's Social Performance Management Center published this manual based on existing written work on the PPI.

If you would like to share feedback on this manual, please contact the Social Performance Management Center at spm@grameenfoundation.org. Your feedback will be considered when future iterations of this manual are developed.

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About the Progress out of Poverty Index® (PPI®)

Introduction

The Progress out of Poverty Index® (PPI®) is a poverty measurement tool for organizations that work with the global poor. The PPI uses a survey and scoring system to estimate the likelihood that a household is living below national and international poverty lines, and through basic computation, an organization can determine the rate of poverty among a group of households. With the PPI, organizations can integrate objective poverty data into their assessments and strategic decision-making.

The PPI is a public good managed by Grameen Foundation. Mark Schreiner of Microfiance Risk Management, L.L.C. is the developer of the PPI.

This manual covers essential information for successful PPI use. Following the recommendations and directions outlined here will increase the reliability and accuracy of PPI data. Grameen Foundation recommends that managers and appropriate staff members review the information in this manual carefully before committing to a PPI pilot or full-scale implementation.

Why measure poverty?

Grameen Foundation believes that real, objective data should drive decision-making when serving the poor. Organizations that collect poverty data from all or a statistically significant sample of households they reach are able to:

- ▶ **measure** poverty outreach (i.e. the portion of customers, clients, or employees who live below the poverty line or are vulnerable to becoming poor),
- ▶ **assess** the performance of the intervention among the poor and poorest, and
- ▶ **track** poverty levels over time.

With these data, management can make informed strategic decisions and can provide stakeholders with objective evidence that the organization is serving the poor and those vulnerable to poverty.

What types of organizations should measure poverty?

Almost any organization that works with the global poor can discover value in objective, household-level poverty data. Over 200 organizations around the world currently use the PPI. The following are examples of the types of organizations that use the PPI:

- ▶ Microfinance Institutions
- ▶ Agricultural Coops
- ▶ Non-governmental Organizations (NGOs)
- ▶ Impact Investors
- ▶ Research Firms
- ▶ International Corporations

To learn more about the organizations that currently use the PPI and the value they have found in PPI data, see the 2014 Global Report on Poverty measurement with the Progress out of Poverty Index®.

PPI Features

The PPI is a 10-question scorecard and look-up table that provides the likelihood that the survey respondent's household is living below various poverty lines. It is a comparably simple and low-cost method of measuring household poverty.

Unique PPI documentation is published for each country. As of 2014, there are PPIs available for 55 countries around the world. Visit www.progressoutofpoverty.org for a current list of PPIs.

Grameen Foundation publishes the following documents per each country-specific PPI.

Name of Document	Description
PPI Scorecard and Lookup Table	Country-specific set of PPI indicators and corresponding lookup tables used to generate poverty likelihoods and rates.
Interview Guide	Short guide for the PPI scorecard that includes the most important definitions, examples and suggested ways to ask the indicators based on the national survey's enumerator guide and field test conducted during PPI development.
Sample Size Calculator	Provides a country-specific formula for estimating precision levels of PPI results and determining sample sizes based on desired confidence intervals and levels.
Technical Design Documentation Memo	Detailed technical description of the PPI design and construction, written by Mark Schreiner.

Benefits of the PPI

The PPI is quick and easy to administer. In 5-10 minutes, a staff member can administer the PPI survey to a household member, tally the scores, and determine the respondent's household poverty likelihood.

The PPI has a known accuracy and is derived from data. Based on national household survey data, statistical analyses testing the accuracy of PPI data demonstrate, on average, that at a 90% confidence interval, the PPI is accurate within +/-2-3% for the aggregate portfolio and +/-12-15% for individuals.

The PPI is cost-effective. The PPI scorecard, look-up table, and supporting documents are free for download at progressoutofpoverty.org. The amount of staff time that an organization dedicates to implementing the PPI will vary, but can be kept to a minimum if the PPI is integrated into existing client surveys. At a minimum, data entry requires only a spreadsheet application, such as Microsoft Excel.

Limitations of the PPI

The PPI captures a snapshot of poverty levels and can be used to track changes in those levels over time, but it cannot detect causality. Organizations must decide on the appropriate action to take, based on the information

that the PPI provides. With a control group and deeper analysis, the PPI could be instrumental in determining impact, but that is beyond the scope of this manual.

It is also important to note that the PPI scorecard is based on data from a nationally representative group of households. When you apply the survey to a group of households that are not nationally representative – such as a group of farmers or a group of women – there will be 'out of group bias'. Organizations that use the PPI will usually encounter out of group bias because they have designed their services to meet the needs of households and individuals with specific characteristics, or because they do not operate across the entire country.

Most organizations cannot avoid this bias, and since the bias will be different in every case, Grameen Foundation cannot predict the bias ahead of time. Those responsible for analyzing PPI results and making strategic decisions based on those analyses should consider how their unique context may affect PPI results.

Mark Schreiner, the developer of the PPI, is working on a study about accuracy of the PPI applied to various sub-national groups. Preliminary findings indicate only fairly small decreases in accuracy for these sub-national groups.

Tip: Make sure management understands the benefits and limitations of the PPI before beginning the pilot.

PPI Development

The PPI is developed by Mark Schreiner of Microfinance Risk Management, L.L.C.

The questions, responses, and weights on the PPI scorecard and look-up table are derived from each country's most recent national household expenditure or income survey. These surveys typically contain 200 to 1000 questions. Of these, ten questions are derived for the PPI scorecard, based on a balance of the following criteria:

- ▶ The question has a strong correlation with poverty, i.e. there is statistical significance that households who answered the question a certain way are below the poverty line.
  Example: "What is the level of education attained by the head of the household?"

- ▶ The question is easy to answer quickly and simple to verify.
  Example: "Of what material is the roof of the residence made?"

- ▶ The question is liable to change over time as poverty level changes.
  Example: "Does the household own a motorbike or car?"

After the scorecard questions are selected, the scoring system is developed so that the lowest possible score is 0 (most likely poor) and the highest is 100 (least likely poor). The look-up table is also developed. Each PPI scorecard is published with a Design Documentation Memo. Read this document for your country's PPI for a detailed account of how the PPI was made and why it is statistically sound.

The PPI Development Process

The following diagram outlines the steps for creating a new PPI or updating an existing PPI:

Data Acuisition → PPI Drafting → User review → Testing → Final material development
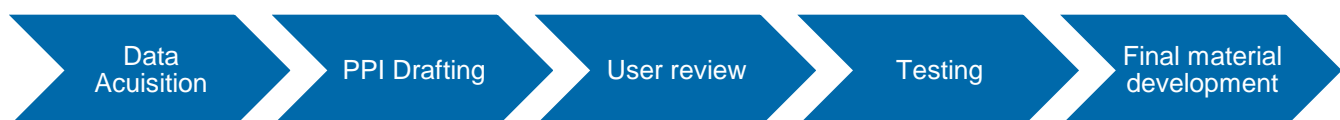
Data Acquisition

Acquiring the national dataset for each country depends on the following variables: availability and access to all necessary national data and materials, funding, priority and demand. The most challenging variable is the availability and access to all the necessary national data components and materials.

PPI Drafting

Mark Schreiner drafts the PPI scorecard once all the national survey information is received and all variables are verified. He begins by identifying 50-150 indicators that are the best predictors of poverty. From that list of indicators, he selects 10-20 that are easy to interpret and verify and liable to change over time. Additionally, redundant indicators are eliminated. For example, "Does the household have electricity?" would not appear on the same scorecard as "Does the household own a television?" even if both have strong correlations with poverty.

User Review

Grameen Foundation and Mark Schreiner invite a variety of stakeholders to review the draft PPI scorecard using an electronic form. The review helps Mark Schreiner and Grameen Foundation to identify and resolve issues with indicators.

Testing Process

The goal of the testing process, which includes both cognitive and field testing, is to improve the accuracy of scorecard collection by thoroughly testing the PPI scorecard. The cognitive testing includes focus groups and observational interviews.

Final Material Development

The table below describes all materials that may be published with a PPI, but many PPIs are published with fewer materials than are listed here.

How to Use the PPI

Conducting the PPI Interview

The interviewers are usually organizational representatives or external enumerators who interface directly with the population being surveyed. The training and orientation of interviewers can be completed in a day and should be performed no more than one week prior to conducting the pilot.

It is important that the interviewer adhere to the following interview procedures:

1. Strictly adhere to the PPI questions and format. Do not modify or vary the questions' meaning in any way.

2. Follow the definitions and guidelines for interpreting the questions found in the Interview Guide, which are based on the national survey's enumerator manual.

3. Ensure every question is answered, either by inspection or by verbal response.

4. Follow-up with any missed clients who are scheduled to be interviewed, but, for whatever reason, have not been interviewed.

Alternative methods for administering the PPI survey

The preferred way to administer the survey is for a trained enumerator to travel to a respondent's home and to ask the 10 questions in an interview format. This is the preferred method for two reasons:

▶ Enumerators are trained to understand the meaning of each survey question and are able to clarify any unfamiliar or confusing terms for the respondent.

▶ In-home surveying allows an enumerator to validate some of the responses by observation.

While in-home interviews are the recommended survey method for the PPI, in-home interviews can be expensive and time-consuming. This is especially true for organizations working with rural populations where households can be difficult to reach. If this is the case for your organization, you may need to consider other survey methods such as SMS, mail, or community center surveying. These methods are called "out-of-home data collection methods."Grameen Foundation is currently testing the accuracy of out-of-home data collection methods. Preliminary findings show that accuracy is preserved when a trained enumerator is present.

For more information about out-of-home data collection methods, read the *Guide to Evaluating Out of Home Data Collection Methodologies*, found at www.progressoutofpoverty.org/materials-piloting-and-implementing-ppi.

Interacting with the client

Once inside the client's home, the interviewer should introduce himself/herself and initiate an informal dialogue to make the client comfortable and to build rapport. Some examples of non-threatening questions include:

"How are you?"- "How is your family?"- "How is your health?"

It is important to explain the purpose of the interview to the client without giving the client any reason to alter their answers. Refer to the following sample introduction.

"Good morning/afternoon. We at [Organization name] always want to know if we are helping our clients. That's why I am here. I would like to ask you 10 questions that can help us see how our services are helping you. Don't worry, this won't take more than a few minutes of your time, and it will not affect your relationship with us."

If at any point during the interview, the client expresses some discomfort with the interview, the interviewer should return to a more informal dialogue to make the client feel at ease, before resuming the interview.

PPI Indicators and Scoring

Each PPI scorecard contains ten multiple-choice questions. Each question must be asked precisely as it is presented (or in translation, as faithful to the original wording as possible.) Interviewers may choose only one answer choice per question. Each answer choice has a corresponding score or numerical value.

The questions and scores on the PPI scorecard CANNOT be changed. If an indicator is changed, the statistical link is broken and the PPI score is no longer associated with a poverty line.

After all 10 questions are answered, the interviewer adds up the response values to calculate the PPI score. All possible scores fall between 0 and 100.

Finding the Poverty Likelihood

That PPI score is *not* the poverty likelihood. The score is converted to a poverty likelihood value using the corresponding PPI look-up table.

The PPI score is then associated with the likelihoods of falling into certain poverty classifications.

The PPI score range is located in the left column and the rest of the columns contain corresponding poverty likelihood probabilities.

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
	B. Three	5
	C. Two	11
	D. One	17
	E. None	23
2. What is the highest educational level reached by the female head/spouse?	A. None, or pre-school	0
	B. Primary or middle school	3
	C. High school	6
	D. No female head/spouse	8
	E. Post-secondary or college (1 to 4 years)	9
	F. Post-secondary or college (5 years or more)	17
3. How many household members spent most of the past week working?	A. None	0
	B. One	9
	C. Two or more	14
4. In their main line of work, how many household members work as wage or salary employees for a private firm or the government?	A. None	0
	B. One	4
	C. Two or more	11
5. What is the residence's rate class for electricity?	A. No class or zero (no connection, pirated connection, or generator), one, or two	0
	B. Three	4
	C. Four, five, or six	9
6. What fuel or energy source does the household	A. Firewood, wood, charcoal, coal, electricity, gasoline, petroleum, kerosene, alcohol, or waste material	0
	B. LPG from a cylinder or tank	2
		3
		6

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

Additional circled points: 0, 4, 0, 3, 0, 0, 4, 0, 9

Total score: 30

How to Prepare for a PPI Pilot

Identify Pilot Objectives

The first step to planning a PPI pilot is determining the organization's objectives for the PPI pilot. For example, the following two pilot objectives are common:

- ▶ Obtain PPI data for a representative sample of the organization
- ▶ Test logistical operations of using and collecting PPI data

Clear objectives are essential to successful PPI piloting and, later, implementation. Management should determine what it needs to learn from the piloting process and be sure that aspects of the pilot design, such as sampling method, support this learning.

Sampling

Organizations should design the sampling method so that it supports the goals of the PPI pilot. For example, if a goal of the PPI pilot is to determine the organization's poverty outreach, the organization should either survey all clients (called a census) or a representative sample of clients. Alternatively, if the organization is not concerned with statistical accuracy during the pilot stage and is more focused on testing logistical or operational challenges, the organization may survey a non-representative sample of clients, such as only new clients or only clients from one region. For more information on sampling, see page 10.

Review the PPI Standards of Use

The PPI Standards of Use outline the actions that an organization must take to ensure accurate and reliable PPI data. The Standards are divided into two levels: Basic and Advanced.

The Basic PPI Standards of Use are best practices that an organization should adhere to in order to accurately report its PPI data.

The Advanced PPI Standards of Use are the best practices identified among organizations that demonstrate exceptional integration of poverty data within their operations. Systems have been set up that effectively capture and analyze poverty data. Insights are drawn and lead to changes that improve an organization's offerings and outreach to the poor. These advanced standards have been designed to better distinguish high performers.

Organizations considering using the PPI should first consider whether they are capable of meeting the criteria outlined in the Basic Standards of Use, since these are minimum requirements for accurate and reliable PPI data.

The Standards of Use can be found online at www.progressoutofpoverty.org/standards-use.

Examine Operational Readiness

1. Review dedication to poverty reduction.

Client-level poverty data can guide institutional policy on what targeting cutoffs to set, how to deepen outreach to the poor, and what types of interventions to apply to different market segments. However, a lack of commitment from top management can severely hamper the usefulness of the tool within the organization. Therefore, top management support is critical. In addition, endorsement of the PPI and opportunities for staff involvement at all levels can make the difference between a smooth and welcome transition and a forced, unpleasant transition.

- ▶ How does the organization plan to use the PPI? What are its goals?

- ▶ Is serving the poor written into the mission, objectives or purpose?

- ▶ Are there clearly defined social goals that include poverty outreach?

- ▶ Is there a board member or senior official in charge of or championing poverty outreach?

- ▶ Does the board or senior management require formal social performance reporting?

- ▶ Do funders or stakeholders support work in social performance or social impact?

2. Review the current operational structure as it relates to PPI data collection.

Pulling together preliminary data will help an organization plan the PPI pilot. Understanding the current working environment helps an organization to integrate the PPI into its existing operations. For example, an organization may be able to administer the PPI at times when it is already scheduled to interact with clients. Taking an inventory of such touch-points is a useful step in pilot-planning.

- ▶ Identify the number of:
    - o Geographic regions of operation.
    - o Clients or customers currently served and an estimate of future outreach.
    - o Staff available to assist with PPI implementation.

- ▶ Study the organization chart and highlight key decision makers that need to receive regular updates of PPI implementation. Focus on those who can address implementation issues.

- ▶ Obtain upcoming dates for board meetings and work with senior management to include the PPI on meeting agendas as appropriate.

3. Review the process for collecting PPI data to ensure a smooth, coordinated flow with existing processes that your organization has in place for staff-client interactions.

- ▶ Is there a person or unit that would regularly provide PPI trainings?

- ▶ Do staff visit the clients' homes during the product or service lifecycle? If not, what is the level of interaction or engagement with clients?

- ▶ Does the organization conduct regular, e.g., semi-monthly or annual data collection of its clients?

- ▶ Is data already collected for the purpose of measuring poverty outreach?

- ▶ What is the quality control or internal audit process? How often is it conducted and by whom?

- ▶ Are the findings from the audit or quality control reported to senior management?

- ▶ Is there a process map for the existing staff-client interaction at each point in the product or service life-cycle? If so, use the map during your review. If not, write down a short description of the process. Pay

particular attention to any challenges or opporturnities that existing processes may present to PPI data collection and quality control.

4. Maximize opportunities to adapt PPI implementation to existing operational processes that staff and clients may already be familiar with.

- ▶ Use existing written procedures as appropriate to help plan PPI implementation. Review the organization's formal documentation procedures on how the organization:
    - o Develops, pilots, and launches products and services for its target clients; and
    - o Manages the impact of introducing new products and services on the organization itself (e.g., human resources, corporate culture).

5. Review the information technology needs and requirements that are specifically related to PPI data collection, processing, analysis, and reporting.

Piloting the PPI does not require the use of sophisticated software or equipment. The data is simple enough to either be entered into a simple spreadsheet program such as Microsoft Excel or into an existing MIS. Nevertheless, it is important to ask the following questions:

- ▶ What type of management information system (MIS) does the organization use?
- ▶ Is the MIS software easily customizable to include new variables?
- ▶ Does the organization have a system in place to secure its data?
- ▶ Is there a dedicated person or staff performing data entry? How often?
- ▶ What are the regular reports that are created and used by the organization to track its performance? How often are these reports generated? By whom? List the reports in the implementation plan.
- ▶ Who receives regular operational reports?

6. Conduct on-going short training or orientation sessions with appropriate staff on any of the above items.

- ▶ Review an existing operational process (e.g., client-level data collection) to highlight what will and won't change with PPI implementation. For any changes, discuss the reasons why.
- ▶ If you are using Excel as your data analysis software, have one of your staff lead a short "how to" session on PivotTables (see Guide to Using PivotTables in Microsoft® Excel 2007 on www.progressoutofpoverty.org).

Implementing the PPI

After piloting the PPI, an organization can apply the lessons it has learned to a full-scale PPI implementation. For example, if an organization works in five regions of a country but only piloted the PPI in one region, management should be sure to assess what worked well and what worked poorly in the pilot stage before beginning PPI data collection in the remaining four regions.

Develop an Action Plan

Full PPI implementation requires a comprehensive action plan. It will usually accomplish the following:

- ▶ Define the population to be surveyed
- ▶ Define the sampling methodology
- ▶ Integrate the PPI into client intake forms
- ▶ Assign responsibilities for the administration of the tool, collection, and analysis of the data
- ▶ Train field staff to administer the PPI
- ▶ Set up a system of quality control

The plan will also include a timeline for completing each of the tasks.

Evaluating the Action Plan

An organization may need to re-visit and adjust its action plan several times during the implementation of the tool as it receives feedback from staff and clients. This plan can later be expanded into an operational manual, when the organization is clear about how to better integrate the PPI within its operations.

Here also, it is important for the staff to discuss each of the PPI indicators to clear up any confusion regarding the meaning of the indicator and the different response categories. Any additional indicators that management deems necessary for evaluating a client can be added to the PPI questionnaire but will not be assigned a score and will not be included in the client's final poverty likelihood score.

Sampling

The following steps should be taken when an organization wishes to administer the PPI to a sample of clients, opposed to a census.

1. Review the sampling method (also referred to as sampling design).

Define the rationale for the sampling method you are using (e.g., simple random, cluster).

- ▶ Why are you using this method? How does this method align with the goals of your implementation plan? How does this method help you address the questions or hypotheses stated in your implementation plan?
- ▶ What are the main considerations specific to your organization that should be taken into account when using this method?
- ▶ How are you ensuring that the method mitigates sampling error?

Define the population you are sampling with your sampling method – all new clients; all clients in a representative sample of field offices or branches; a representative sample of all clients or all new clients in a in a representative sample of field offices or branches; etc.

Determine the frequency with which the sample population will be interviewed.

2. Double-check the sample size.

The size (number) of the population you are sampling must be statistically reliable, with a defined level of confidence. Use the sample size calculator for your specific PPI to determine the minimum sample size with a defined level of confidence. Country-specific calculators are on www.progressoutofpoverty.org.

3. Review the training needs of your enumerators.

The success of your sampling strategy is a function of the ability of the enumerators (your organization's staff or consultants) to carry out the strategy. Prepare them for success – provide refresher and just-in time training, paying particular attention to the topic of conducting interviews and scoring.

Human Resource Requirements

The PPI is designed so the organization can use readily available human resources and equipment.

Managers can prepare the sampling framework and train field staff in administering the PPI. Field staff can conduct interviews during routine visits to clients' homes and input the data daily into a simple Excel spreadsheet. There is no need to hire people to enter the data or to buy sophisticated software or equipment. Organizations with a separate research department can assign the responsibilities of sampling, analyzing, auditing and reporting to that department.

Typical responsibilities at each staff level are outlined in the table below.

ACTIVITY	STAFF LEVEL
Preparing the sampling technique and managing the PPI pilot	Manager
Training interviewers in administering the PPI	Manager
Training on PPI scorecard for data collection	Field
Visiting client households	Field
Data entry	Field/data entry
Analysis	Manager
Auditing	Manager
Prepare external reports	Manager
PPI interview	Individual Client

Tip: document the actual time it takes to conduct each interview; as an organization moves from the pilot stages to the implementation phase, this information will be helpful as PPI is integrated into organizational processes.

Ideal Skill Sets

Here are some minimum skills that staff at different levels should possess to ensure the collection of quality data.

a. **PPI Project Management:** Senior level staff member with organizational influence; usually a regional manager or the head of the research department; will act as an internal promoter of the PPI pilot; strong coordination and facilitation skills required.

b. **Action Plan:** Middle management level (e.g. branch manager); good business planning skills; can negotiate costs, resources and time constraints

c. **Interview:** Junior level staff (e.g. field staff); good rapport building skills, good communication skills; familiarity with clients

d. **Data Entry:** basic computer skills; familiarity with spreadsheet applications

e. **Analysis and Reporting:** Statistical knowledge/familiarity; good presentation skills; strong writing skills; critical thinking skills; someone who understands current practices and organizational objectives, proficient in MS Office applications, especially Excel.

Data Collection and Data Management

Interviewer Training

Before interviewing beneficiaries, all staff members should be properly trained on how to ask the questions on the PPI scorecard and interpret answers. It is also recommended that staff members be trained to understand how the PPI works, and why the organization is implementing the PPI.

Management Information System (MIS) Minimum Requirements

Following the pilot, organizations might want to integrate the PPI with current systems or customize a stand-alone database to link with the PPI. MS DOS and Microsoft Access are simple alternatives that allow for easy data organization and analysis. The key to integrating is using a common unique identifier, such as client identification number, for the PPI and financial information within the disparate or connected databases. This common identifier will assist in the ease of integration and analysis.

Ensuring Data Integrity

Have brief meetings or check-ins with staff on a regular basis during data collection.

Following the first set of interviews, the field staff and managers should reconvene at the branch office for a feedback session. The feedback session can address mistakes, areas of confusion, client response and level of comfort with the PPI tool, field staff opinions on its implementation, the time required to administer it, and any other issues that arise during data collection.

▶ If your organization is collecting PPI data on the basis of sampling, ensure that the sampling strategy, (e.g., type of sampling) is being conducted as planned.

▶ Have a short question and answer session with staff to verify that everyone knows how to conduct interviews, understands the indicators, etc.

▶ Encourage staff to share learning and experiences in order to identify and resolve any issues or inconsistencies related to conducting interviews.

▶ Review the timeline for data collection. How many interviews have been conducted to date? Is the organization on track to complete data collection on time (based on your implementation plan)?

Audit the data collection process.

▶ Supervisors should randomly review completed PPIs brought in by field staff to make sure that all questions are completed and scores are calculated correctly. Grameen Foundation recommends that supervisors **re-collect the PPIs with 10% of those interviewed** as a means of verifying the accuracy of responses recorded. These second interviews should be done within a week of the first interview.

▶ Interviewers should be aware of the quality control measures in place to check any attempts at misrepresenting data.

Review the data entry process.

▶ Supervisors or managers should randomly select completed PPI questionnaires and crosscheck with data entered into the MIS to make sure that the answers and poverty scores on the forms are identical to the answers entered into the MIS.

Work closely with staff to generate and review draft reports.

▶ Use the data collection period to build draft reports that:

   o Address the objectives in your implementation plan, especially those that are of particular importance to senior management; and

   o Can be analyzed and explained easily and accurately, especially to different audiences.

▶ Circulate interim, draft reports as necessary to senior management and staff to update them on the status of PPI implementation and ask for feedback on the format and content of the reports.

Data Analysis

Estimating Group Poverty Rates

To find the rate of poverty in a group of households surveyed with the PPI, find the average, or mean, of the poverty likelihood values of all households surveyed.

Remember: to find the average, or mean, you add all values and divide the sum by the number of values.

To find the rate of poverty in a group of households that have been surveyed with the PPI, convert each household's PPI score to a poverty likelihood value using the PPI look-up table. Then, add all of those likelihood values together and divide the sum by the number of households surveyed. That number is the percent of households in that group that live below the poverty line.

Can you calculate the poverty rate of a group by averaging the group's PPI scores and converting that average score to a poverty likelihood value? **No.** You cannot calculate the poverty rate in a group by averaging the score. You must average the likelihood values, or your result will be wrong.

Weighted Averages

Calculating a weighted average can be useful for finding the poverty rate of a group when you have poverty rates for a number of sub-groups. This is common among organizations that have different branch offices. Each branch office reports a poverty rate to the organization's leadership, which in turn must determine the poverty rate among all clients of the organization. To do this, you must use a weighted average to account for the different numbers of clients at each branch:

$$\frac{(\text{number of clients in group A} \times \text{poverty rate of group A}) + (\text{number of clients in group B} \times \text{poverty rate of group B})}{\text{number of clients in group A} + \text{number of clients in group B}}$$

Multiply each branch's poverty rate by the number of clients surveyed at that branch. Find that number for each branch and add those numbers together. Then divide by the total number of clients surveyed at all branches.

Confidence in Poverty Rates vs. Poverty Likelihoods

The poverty rate of a group will be more accurate and reliable than the poverty likelihood of an individual household.

▶ A **poverty likelihood** is the probability that an *individual household*'s expenditure level falls below a poverty line. Since this is a probability, one cannot say with certainty that an individual household is below a poverty line, though confidence increases the nearer the poverty likelihood is to 100 since this means the odds of a household being below a poverty line are much higher.

▶ A **poverty rate** refers to the prevalance of poverty in a *group of households.* It is an estimate of the actual poverty rate for the group. A poverty rate essentially allows an organization to accurately estimate the number of households below a poverty line. However, the PPI cannot tell you which households are actually poor. Users determine poverty rates of groups by averaging the poverty likelihoods of all of the households (not their PPI scores). A poverty rate derived with the PPI may be used with a high degree of confidence in decision making.

Analyzing Poverty Outreach

Apects of Poverty Outreach

▶ *Concentration* refers to the percentage of an organization's clients who are living below the poverty line.

▶ *Scale* refers to the total number of poor clients served by the organization.

▶ *Penetration* contextualizes scale by comparing it to the number of poor households in the area.

These aspects provide ways to observe poverty outreach of an organization – some organizations may show high concentration but low scale and penetration, while others may have the opposite. This means that there is no single indicator or measurement that determines whether an organization's poverty outreach is good or bad. Instead, it is important to consider all these aspects of poverty outreach together.

Benchmarking poverty outreach with the PPI

Benchmarking is the comparison of an organization's results to an industry standard or best practice. It is a popular method used by organizations to assess their performance and gain valuable insights into their relative performance.

For pro-poor organizations, reaching and retaining poor households are important social performance goals that should not be taken for granted. The PPI uniquely allows its users to benchmark its poverty concentration to objective data, such as national and regional poverty rates, and to more nuanced figures developed internally. Doing so enhances the power of poverty data to drive strategic decision planning and ultimately improve the lives of the poor.

Reasons to benchmark poverty concentration

There are four main reasons that organizations benchmark their poverty data:

1. To assess their client targeting strategy in an objective manner;

2. To inform strategic decisions about resource allocation;

3. To improve the delivery and design of products and services; and

4. To report performance to outside parties, including investors and donors.

Organizations that strive to reach the poor often benchmark their poverty data as a means of assessing their ability to do so. When an organization's regional poverty concentration is significantly higher than that region's poverty incidence, the organization has one valuable, objective indicator of good social performance. At most pro-poor organizations, the percentage of clients who live below a particular poverty line should be at least as high as the percentage of households that live below the same line. If not, the organization should evaluate its targeting methods, product design, client eligibility requirements or any other hindering factors in reaching poorer clients.

Organizations also benchmark poverty data to understand the effectiveness of targeting programs over various regions. Frequently, PPI users find that targeting performance is very strong in one or more regions while substandard in others. In evaluating the causes of this imbalance, management can consider shifting resources to markets that appear underserved.

When organizations fail to meet their desired poverty concentration, it is important to understand whether products and services are adequately tailored to be both desirable and useful to the poor. For example, if an organization develops a product specifically aimed at the poor but finds that its poverty concentration is far below

the regional benchmark, it has reason to suspect that the product is falling short of meeting the poor's needs. Perhaps the product's cost is too high or efforts to reach rural households, which tend to be poorer, have been insufficient.

Finally, organizations benchmark their results in order to report on performance to outside parties. This is often for reputational purposes; confidence in an organization that strives to reach the poor grows when its ability to do so is proven. In addition, some investors require benchmarking as part of their evaluation of potential and current investees.

Comparing performance in different regions or countries

One simple yet informative way to disaggregate poverty data into sub-groups is by regional location. This allows organizations to determine the regional poverty rates of their clients.

In the appendix of a PPI's Design Documentation Memo, you will find a number of valuable tables and figures with information that facilitates detailed data analysis. The data required for regional benchmarking are located in a set of tables that provides national and regional poverty rates. Typically, both household-level and person-level poverty rates are given.[1] For most PPIs, poverty rates are further broken into urban and rural poverty rates.

As with any comparative analysis using the PPI, reference only the regional rates published in the PPI Design Documentation–not rates published elsewhere, even those that are more recent or are for different sub-geographic regions–unless you are certain the rates are comparable. Other poverty figures may be based on a different definition of poverty, as governments update definitions of expenditure or the definition of a poverty line over time. Furthermore, the reported poverty rates may be calculated slightly differently from poverty rates derived for the PPI.

PPI data should always be benchmarked against comparable figures. Typically, the best rates to use when benchmarking are those for a sub-geographical region within countries, such as states, departments or provinces. It may be tempting to compare poverty concentration to a country's national poverty incidence, but doing so may be misleading.

Considering other benchmarks

In addition to national and regional poverty rates, organizations commonly use the following bencharks for poverty data:

- ▶ Peer-derived benchmarks;
- ▶ Comprehensive benchmarks; and
- ▶ Externally imposed benchmarks.
- ▶ Peer-derived benchmarks

Often organizations will compare their poverty concentration to that of a peer or peers. Doing so may uncover valuable insights into the effectiveness of your program that comparison with regional rates may not bring to light. Additionally, since peer-derived benchmarks ostensibly use recent data, they are less susceptible to economic changes over time than regional poverty rates published in the PPI Design Documentation.

Organizations' poverty rates at the institution level can be found for many microfinance institutions on MIX Market's website or on organizations' own websites, where more detailed poverty rates may be published. You may also request more detailed poverty concentration information from the organization itself. Offering to provide

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[1] If your organization does not deliberately calculate person-level rates, i.e., it uses the poverty rates from the PPI Look-up Table or uses outputs from TaroWorks, then you may confidently reference the household-level poverty rates.

your own poverty data is one way to encourage sharing. Additionally, networks and cooperatives may be able to facilitate the construction of peer benchmarks, allowing for the participation of many organizations.

Remember that it is important to benchmark using comparable rates. Organizations should only be assessed relative to similar organizations working in the same region. Organizations operating in different provinces should not be expected to have the same poverty rates.

Comprehensive benchmarks

Organizations frequently set their own benchmarks, going beyond regional rates or rates of peer institutions. Several factors should influence the determination of comprehensive benchmarks, including:

Location: As discussed above, location of operations is a significant benchmark and it must be considered when creating an internal benchmark.

Historical rates: Historical rates allow an organization to use past performance indicators to inform how the organization can expect to do in the future.

Organization's mission: Some organizations cite specific poverty rates in their mission statements. This is itself a benchmark.

Peer performance: As described above, organizations may wish to compare their performance to that of others.

Sustainability: Organizations should balance their social performance with the sustainability of their operations. There are often barriers to reaching poorer clients in remote areas, ranging from poor infrastructure to internal conflict. When an organization operates in regions with poor who are difficult to reach, maintaining low poverty concentration relative to the regional poverty incidence may allow service to poor households who would not otherwise be reached.

Product and service offerings: The qualities of products and services will influence their desirability among the poor. In addition, eligibility requirements that hinder the participation of poorer clients, such as having an existing business or having a particular profession, can systematically exclude some poor and will impact the poverty concentration that an organization can feasibly expect to have.

While not all of the above need to be factored into an appropriate benchmark or set of benchmarks, there must be sound logic behind their development. Additionally, avoid inflating benchmarks beyond what reasonably can be expected simply because higher poverty concentrations seem more desirable. If after careful consideration of the above a relatively low poverty rate seems appropriate, setting a higher benchmark can position the organization for failure or worse, unethical practices aimed at meeting the unrealistic benchmark.

Externally imposed benchmarks

Sometimes organizations are asked by third parties, such as investors and donors, to meet certain benchmarks as a condition for continued support. This is done in an effort to ensure that organizations truly are poverty focused. The determination of imposed benchmarks varies among requesting organizations from a percentage of a country's poverty incidence under a particular poverty line to benchmarks that consider more complexity.

Because no organization operates within the same context as another, it is important that organizations be transparent and vocal about why they are or are not meeting certain benchmarks. An organization that does not meet imposed benchmarks may have valid reasons and should be ready to provide sound justification for why the benchmark was not reached.

Targeting

Organizations with a mission to serve the poor realize the importance of directing their services to those who need them most, so many specifically target the poorest. The PPI provides a quick, efficient means to target customers or clients based on their probable poverty level. Client selection can be based on PPI data alone or on a combination of criteria as part of a more complex screening process.

Starting out

The first step is to figure out what your organization's goals are and whether targeting can serve those goals. Then, to use the PPI to target poor clients, a cut-off poverty score, i.e., the maximum PPI score a household can have to be considered for a program, must be set. The PPI look-up table groups PPI scores into sets of five, and the highest number in each of these ranges is used as the cut-off score. A cut-off score divides households into two categories: those at or below the cut-off score that are more likely to be poor and those above it that are less likely to be poor.

It would be incorrect to conclude that all households with a score at or below a cut-off score are poor and those with a higher score are not. Targeting status and poverty status are not the same. Poverty status is a fact that reflects a household's expenditure falling below a poverty line but is very difficult to determine. In contrast, targeting status depends on an indirect measurement, in this case the PPI. Successful targeting occurs when those households truly at or below a poverty line are included into a program and those above a poverty line are excluded.[2]

The results of targeting depend on the PPI cut-off score used, as well as the inclusion of other targeting criteria. Any form of targeting with the PPI (or any other poverty measurement tool) will lead to four outcomes:

		Targeting Status	
		TARGETED	**EXCLUDED**
Poverty Status	**BELOW POVERTY LINE**	**Inclusion** Correctly targeted	**Undercoverage** Mistakenly excluded
	ABOVE POVERTY LINE	**Leakage** Mistakenly targeted	**Exclusion** Correctly excluded

- ▶ **Inclusion**: Desired clients are correctly targeted.
- ▶ **Exclusion:** Undesired clients are correctly excluded from a program.
- ▶ **Undercoverage:** Desired clients are mistakenly excluded from a program.
- ▶ **Leakage:** Undesired clients are mistakenly targeted.

Inclusion and exclusion are successful outcomes, while undercoverage and leakage are undesired outcomes. All four outcomes are inevitable using the PPI (or any other poverty-measurement tool) in practical implementations of a targeting strategy because while the PPI provides a great deal of information, it cannot determine with 100% certainty a household's poverty status. Because of this, organizations must

Table 1: Impact of an increase or decrease in each outcome

		Inclusion	Exclusion	Undercoverage	Leakage
Increase	Inclusion	-	↓	↓	↑
	Exclusion	↓	-	↑	↓
	Undercoverage	↓	↑	-	↓
	Leakage	↑	↓	↓	-
Decrease	Inclusion	-	↑	↑	↓
	Exclusion	↑	-	↓	↑
	Undercoverage	↑	↓	-	↑
	Leakage	↓	↑	↑	-

understand each outcome before selecting a cut-off score. Effecting a change in one outcome will impact the others. For example, increasing inclusion will lower undercoverage, but it will raise leakage and lower exclusion. Inclusion and leakage move together, as do exclusion and undercoverage. Increasing one increases the other. Table 1 shows how changing one outcome will impact the other three outcomes.

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[2] Mark Schreiner. (2009) "A Simple Poverty Scorecard for Fiji", http://www.microfinance.com/English/Papers/Scoring_Poverty_Fiji_2008_EN.pdf, retrieved 15 June 2014.

Because the cut-off score excludes clients who score too high, making the cut-off score higher will result in more clients qualifying for the program, and as a by-product more undesirable clients will be included. Conversely, lowering the cut-off score will make the program more selective and can potentially exclude desirable clients. In other words, raising the cut-off score will increase inclusion and leakage, and lowering the cut-off score will increase exclusion and undercoverage.

The following questions must be asked when determining a cut-off score:

- ► At which point does providing services to an undesired, non-poor household outweigh the benefits of reaching an additional poor household?

- ► How comfortable are the organization and its employees with excluding a poor household (undercoverage) in order to avoid leakage?

- ► Are there other targeting criteria that could be paired with the PPI to improve targeting accuracy?

Furthermore, management must determine how the organization treats these two groups. For instance, the group more likely to be poor may be automatically included into the program while the other group is excluded Alternatively, the group less likely to be poor could be screened again using another tool or other client characteristics to determine eligibility.

Selecting a cut-off score

Cut-off scores can be selected in one of two ways, which are discussed below. The first focuses on targeting outcomes and the second aims to achieve a desired poverty rate.

Targeting based on targeting outcomes	Targeting based on poverty rates
1. Assign net benefits and net costs to each of the four targeting outcomes. 2. Select a cut-off score that maximizes net benefit.	1. Choose a desired poverty rate. 2. Select the cut-off score that most closely approximates the desired poverty rate.

Using targeting outcomes to maximize net benefit

Above we explained four targeting outcomes: inclusion, exclusion, undercoverage and leakage. Different cut-off scores are associated with different levels of these outcomes. Since it would be useful to know the relative incidence of each of these four outcomes that one should expect using various cut-off scores, Mark Schreiner of Microfinance Risk Management, L.L.C., the developer of the PPI, creates a table summarizing these outcomes for every PPI at all poverty lines. This table is included in each Design Documentation Memo. Table 2 below was extracted from the 2009 PPI for India and presents the percentages for each outcome when using various cut-off scores. These percentages were derived using a sample of the population on which the PPI was built.

Take a moment to review the data in each of these columns. Note that each row's percentages for inclusion, undercoverage, leakage and exclusion sum to 100%. This table shows us, for any cut-off score, the expected percentage of each outcome when applied to a population. For example, using a cut-off score of 24, 12.6% of a population is expected to be correctly targeted as below the poverty line while 5.9% of the population is actually poor but excluded. Likewise, 15.9% of the population will be included into this program in spite of being above the poverty line (leakage) while 65.7% of the population will be correctly excluded (exclusion). The column "Total Accuracy" sums both inclusion and exclusion and is included because it is a simple way to assess accuracy across all four possible targeting outcomes. Total Accuracy may not be sufficient for organizations that worry about undercoverage or who are unconcerned by excluding non-poor clients.

Table 2: Target composition by cut-off score for National Tendulkar Poverty Line (MMRP)

Cut-off Score	Inclusion	Under-Coverage	Leakage	Exclusion	Total Accuracy
4	1.3	17.1	0.4	81.2	82.5
9	3.7	14.8	1.8	79.7	83.4
14	7.0	11.4	4.8	76.8	83.8
19	10.4	8.0	9.9	71.7	82.1
24	12.6	5.9	15.9	65.7	78.2
29	14.7	3.7	23.8	57.7	72.4
34	16.4	2.0	33.4	48.2	64.6
39	17.3	1.1	41.6	40.0	57.3
44	17.9	0.5	49.4	32.2	50.1
49	18.2	0.2	55.9	25.7	43.9
54	18.3	0.1	61.8	19.8	38.1
59	18.4	0.0	66.9	14.7	33
64	18.4	0.0	71.3	10.3	28.7
69	18.4	0.0	74.5	7.1	25.5
74	18.4	0.0	77.0	4.6	23.0
79	18.4	0.0	79.1	2.5	20.9
84	18.4	0.0	80.4	1.2	19.6
89	18.4	0.0	81.2	0.4	18.8
94	18.4	0.0	81.6	0.0	18.4
100	18.4	0.0	81.6	0.0	18.4

Inclusion, undercoverage, leakage, and exclusion normalized to sum to 100. This table was modified from Figure 10 of the Design Documentation Memo for India, found on page 97.

Step 1. Assign net benefits and net costs to each of the four targeting outcomes.

For each of these four outcomes, management assigns values that reflect the degree to which the outcome is viewed as acceptable or unacceptable. Doing so translates the mission and values of the organization into weights to be applied in targeting. These weights can be any value (e.g., 1 or 100) -- but their relative difference should reflect the values of the organization. For example, if inclusion is valued twice as much as exclusion, appropriate weights could be 1 and 2 or 5 and 10, as long as the weight for inclusion is double the weight for exclusion. Another way to think about it assigning weights is to ask yourself, how many cases of leakage you are willing to accept to achieve one case of inclusion? Then that figure is the weight for inclusion, and 1 is the weight for exclusion. Typically you can get away with just putting weights on inclusion and exclusion (or equivalently, on undercoverage and leakage) and leaving the other weights at zero because the other two move more or less in sync.

Assigning weights to each of the four outcomes is a difficult step because it is subjective and requires careful consideration. Questions to be asked are: How important is successful inclusion? Is successful exclusion equally as important? Will leakage take too many resources away from those that could use them? Does undercoverage impact the effect of the program? These questions are illustrative of common concerns, but are not exhaustive.

It is important to remember that there will always be targeting errors with any poverty-measurement tool – none will succeed in causing only inclusion and exclusion with no errors.

Step 2. Review cut-off scores that lead to the highest net benefits and select the most feasible score.

Once these values, or weights, are determined, multiply them by the relevant percentages listed for each cut-off score. The sum of these products is called the net benefit[3] and is calculated as follows:

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[3]Adams, Niall M.; and David J. Hand. (2000) "Improving the Practice of Classifier Performance Assessment", Neural Computation, Vol. 12, pp. 305–311.

$$\text{Net Benefit} = \begin{array}{l} (\quad \text{Inclusion Weight} \quad \times \quad \text{Inclusion Percentage} \quad) \quad - \\ (\text{Undercoverage Weight} \times \text{Undercoverage Percentage}) \quad - \\ (\quad \text{Leakage Weight} \quad \times \quad \text{Leakage Percentage} \quad) \quad + \\ (\quad \text{Exclusion Weight} \quad \times \quad \text{Exclusion Percentage} \quad) \end{array}$$

Because selection of a cut-off score can impact operations and practices, it is best to consider three or four cut-off scores with the highest net benefits – not just the one with the highest. The following should be considered for each of these cut-off scores:

- The estimated percentage of all households in a country that would be included. This provides some indication of scale. A very small percentage may indicate that there would not be enough households included into the program to sustain the program or reach the desired number of participants. Conversely, a very high percentage, say 80 or 90 percent, may indicate that targeting is not necessary. In this case, simply include everyone.

- The estimated percentage of included clients who are poor. This is an estimate of the poverty rate that will be achieved using this cut-off score. This is also known as *poverty concentration*[4].

- The estimated percentage of poor households in the country that would be targeted. This provides an indication of the degree that poor households could be reached. Programs cannot expect to achieve these numbers at these cut-off scores – they simply represent the percentage of poor within a country that would be targeted with this cut-off score.

Because these percentages are so important, Mark Schreiner provides a table of them in every Design Documentation Memo, replicated here from the 2009 India PPI as Table 3.

Example of Net Benefits Approach

Let's use a quick example to walk through the process of selecting a cut-off score using the net benefit approach.

Weights on Outcomes for Total Accuracy			
Inclusion	Undercoverage	Leakage	Exclusion
1	0	0	1

Total Accuracy corresponds to setting equal weights to inclusion and exclusion and disregarding undercoverage and leakage. The highest Total Accuracy net benefit is at the cut-off score that correctly targets and correctly excludes the highest number of households.

Table 3: Target analysis by cut-off score for National Tendulkar Poverty Line (MMRP)

Targeting cut-off score	% all households who are targeted	% targeted who are poor	% of poor who are targeted	Poor households targeted per non-poor household targeted
4	1.7	76.1	7.2	3.2:1
9	5.5	66.5	19.9	2.0:1
14	11.8	59.5	38.1	1.5:1
19	20.3	51.4	56.7	1.1:1
24	28.5	44.1	68.1	0.8:1
29	38.5	38.1	79.8	0.6:1
34	49.8	33.0	89.2	0.5:1
39	58.9	29.4	94.0	0.4:1
44	67.3	26.6	97.1	0.4:1
49	74.1	24.6	98.8	0.3:1
54	80.1	22.9	99.5	0.3:1
59	85.3	21.6	99.8	0.3:1
64	89.7	20.5	99.8	0.3:1
69	92.9	19.8	99.9	0.2:1
74	95.4	19.3	100.0	0.2:1
79	97.5	18.9	100.0	0.2:1
84	98.8	18.6	100.0	0.2:1
89	99.6	18.5	100.0	0.2:1
94	100.0	18.4	100.0	0.2:1
100	100.0	18.4	100.0	0.2:1

Based on the weights given to each outcome in this example, looking at Table 2 we can see that a cut-off score of 14 provides the highest net benefit of 83.5, though cut-off scores of 4, 9 and 19 also provide very similar net benefits, so they too should be considered. An organization may also look at Table 3 regarding targeting analysis and determine that a cut-off score of 19 is ideal because 1 in 5 households will be targeted and over 50% of those targeted are estimated to be poor.

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[4] http://www.progressoutofpoverty.org/blog/scale-vs-concentration-poverty-outreach

It is important to keep in mind that the tables available in each Design Documentation Memos prepared by Mark Schreiner are representative of an entire country. The figures in the table would change depending on the region of the country an organization is operating in, but they offer objective data with which to make more informed decisions.

Other examples of setting weights

The above example uses just one of many possible weights for the four targeting outcomes. There is endless list of possibilities for choosing values that best align with your organization. When setting weights, it does not pay to try to get too fancy. There is no right or wrong, and what makes sense and is simple is probably enough. The simple questions to ask are: Is inclusion twice as valued as exclusion? Three times? Equal? What should not be asked is something similar to "Is inclusion 2.34 times more valuable than exclusion?" Also, it is easier to make all the weights positive or zero and not to include negative values.

Below we explore two other examples with different weights.

Avoiding Exclusion

Many pro-poor institutions have a mission to serve only the poor, so exclusion of households above a poverty line is important to ensure that services are given to those most likely to be below the poverty line. To the right we see a possible valuation for this scenario, with exclusion of the non-poor three times as important as inclusion.

Weights on Outcomes for Total Accuracy			
Inclusion	Undercoverage	Leakage	Exclusion
1	0	0	3

By using the net benefit equation above, we are able to calculate the net benefit for each cut-off score with these weights. Table 4 shows the net benefits for cut-off scores up to 24. (We've truncated the table for simplicity. Calculating net benefits for the remaining cut-off scores would not impact this example.) Net benefit is maximized at a cut-off score of 4. At this cut-off score, the four outcomes are as follows:

Table 4: Target analysis by cut-off score for National Tendulkar Poverty Line (MMRP) and associated weights and net benefits

Cut-off Score	Inclusion	Wt.	Under Coverage	Wt.	Leakage	Wt.	Exclusion	Wt.	Net Benefit
4	1.3	1	17.1	0	0.4	0	81.2	3	163.7
9	3.7	1	14.8	0	1.8	0	79.7	3	163.1
14	7.0	1	11.4	0	4.8	0	76.8	3	160.6
19	10.4	1	8.0	0	9.9	0	71.7	3	153.8
24	12.6	1	5.9	0	15.9	0	65.7	3	144.0

- ▶ Inclusion: 1.3% are below the line and correctly targeted
- ▶ Undercoverage: 17.1% are below the line and mistakenly excluded
- ▶ Leakage: 0.4% are above the line and mistakenly targeted
- ▶ Exclusion: 81.2% are above the line and correctly excluded

Note that cut-off scores of 9 and 14 also produce similar net benefits. Looking at Table 4, an organization may decide that a cut-off score of 9 is ideal because the percentage of targeted households that are poor is quite high, but more households are targeted in general.

Inclusion of poor and not concerned about leakage

Other programs and organizations are more concerned with reaching the poor and avoiding undercoverage. Possible values for this outcome are displayed at right.

Weights on Outcomes for Total Accuracy			
Inclusion	Undercoverage	Leakage	Exclusion
5	5	1	1

Table 5: Target analysis by cut-off score for National Tendulkar Poverty Line (MMRP) and associated weights and net benefits

Score	Inclusion	Wt.	Under coverage	Wt.	Leakage	Wt.	Exclusion	Wt.	Net Benefit
4	1.3	5	17.1	5	0.4	1	81.2	1	1.8
9	3.7	5	14.8	5	1.8	1	79.7	1	22.4
14	7.0	5	11.4	5	4.8	1	76.8	1	50.0
19	10.4	5	8.0	5	9.9	1	71.7	1	73.8
24	12.6	5	5.9	5	15.9	1	65.7	1	83.3
29	14.7	5	3.7	5	23.8	1	57.7	1	88.9
34	16.4	5	2	5	33.4	1	48.2	1	86.8
39	17.3	5	1.1	5	41.6	1	40.0	1	79.4
44	17.9	5	0.5	5	49.4	1	32.2	1	69.8
49	18.2	5	0.2	5	55.9	1	25.7	1	59.8
54	18.3	5	0.1	5	61.8	1	19.8	1	49.0

Cut-off scores of 24, 29 and 34 appear appropriate for this valuation. To determine which is best, turn again to Table 3. Since the program is most concerned with reaching the poor, a cut-off score of 34 appears most appropriate given the high percentage of poor households targeted.

Conclusion

Many ratios can be used to relate the four targeting outcomes. How the organization decides to distribute these values depends on its mission and values as well as resource constraints and project sustainability. Once values have been determined, an organization should determine net benefits and consider those scores that lead to the highest net benefit. Then the targeting analysis, shown here as Table 3, should be reviewed to understand the consequences of each score.

Setting a desired poverty rate

Another option used for selecting a cut-off score is first to determine a desired poverty rate and then to find the cut-off score that most closely approximates this rate. You will recall that the third column of Table 3 lists the estimated percentage of included households that fall below the poverty line. This can be interpreted as an estimated expected poverty rate. This method is most apt for organizations that have already set their own poverty outreach goals.

When using this method, remember to use the targeting analysis table built specifically for this purpose and not the Poverty Look-up Table. The Look-up Table cannot be used to estimate a poverty rate among those targeting based off a cut-off score.

Step 1. Determine a desired poverty rate.

Step 2. Reference the targeting analysis table in the Design Documentation Memo or measure the PPI distribution and poverty rates in the specific area of the program or intervention.

Table 3 above, contained in each Design Documentation Memo, provides percentages of households targeted that are poor at each cut-off score. This is the estimated expected poverty rate of a client base targeted using this cut-off score. Using this table is the most cost-effective, timely way to select a cut-off score when an organization has already set its poverty outreach target.

However, there are shortcomings that must be acknowledged. These poverty tables are nationally representative, but because poverty rates vary across a country and within subgroups, the accuracy of results will vary depending on how different the particular client base is from the population of the country as a whole.

Instead of using the nationally representative tables, you may choose to create a similar table of PPI score distributions and poverty rates for the particular region in which you work. To do so, take the following steps:

1. Administer the PPI to a random and representative sample of households in the area in which your organization works. To determine an appropriate sample size, use the sample-size calculator for your country, found on the webpage for your country at www.progressoutofpoverty.org.

2. Determine the percentage of all households that are at or below each of the cut-off scores. List these percentages in a table in a column titled "percentage of all households who are targeted."

3. For each cut-off score, average the poverty likelihoods of all households for the chosen poverty line. List these averages in the same table used in step 2 in a column titled "percentage targeted who are poor."

4. To determine the poverty rate of all households in the locality the program is interested in, average all households' likelihoods of falling under the poverty line. This is not necessary to determine a cut-off score, but is easily determined.

After completing these steps, you will have a table that looks like the one at the right that is specific to your geographical area. **This is not required and may require substantial staff time and cost.** In most instances, errors from application to non-nationally representative samples will not be so great as to warrant a project like this. Your organization may decide to use the tables available in the Design Documentation Memo.

Step 3. Select the cut-off score that achieves the desired poverty rate using the table or distribution from Step 2.

Looking at Table 3, a cut-off score of 19 is necessary to maintain a 50% poverty rate. Note that 20.3% of all households will be targeted.

Let's use this example to understand why the Poverty Look-up Table should not be used to determine a cut-off score. If we chose to select a cut-off score associated with approximately a poverty likelihood of 50% using the Poverty Look-up Table (a section of which is shown in Table 6), we would end up targeting households with scores of 14 and below. Doing so would lead to an estimated poverty rate of 59.5%, as shown in Table 3, much higher than the desired rate.

Table 6: Partial Poverty Look-up Table for the 2009 India PPI

| PPI Score	National Tendulkar (MMRP)
0–4	73.7
5–9	63.5
10–14	53.5
15–19	38

Pairing the PPI with other criteria for targeting

As mentioned, use of additional criteria, such as other demographic characteristics or the results from another poverty measurement tool, can help to improve the precision of an organization's targeting relative to its strategy. Many organizations have chosen to pair the PPI with other screening methods. The establishment of additional selection criteria helps to ensure that households selected into the program are truly the poorest based on the local context.

There are many ways to use the PPI in combination with other criteria. The first two examples apply the PPI as the first screen.
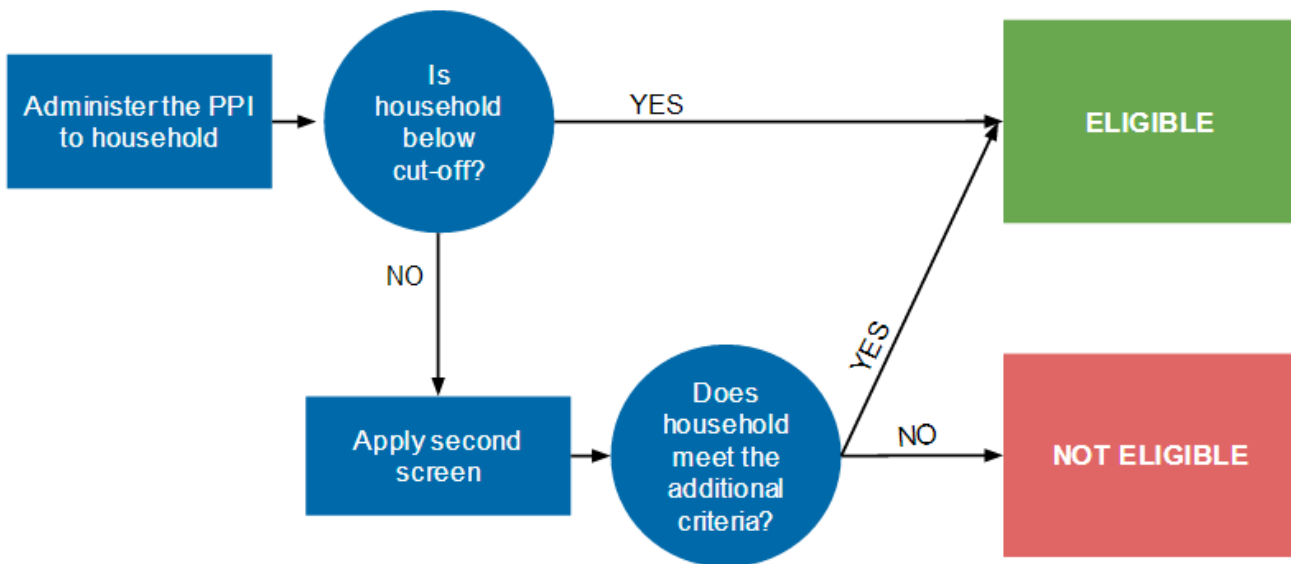
1. The PPI is administered; all targeted households are further screened.

▶ Goal: Reduce leakage and increase exclusion.

▶ Consequence: The poverty rate will be greater than the estimated poverty rate in the targeting accuracy tables. The number of targeted households will decrease.
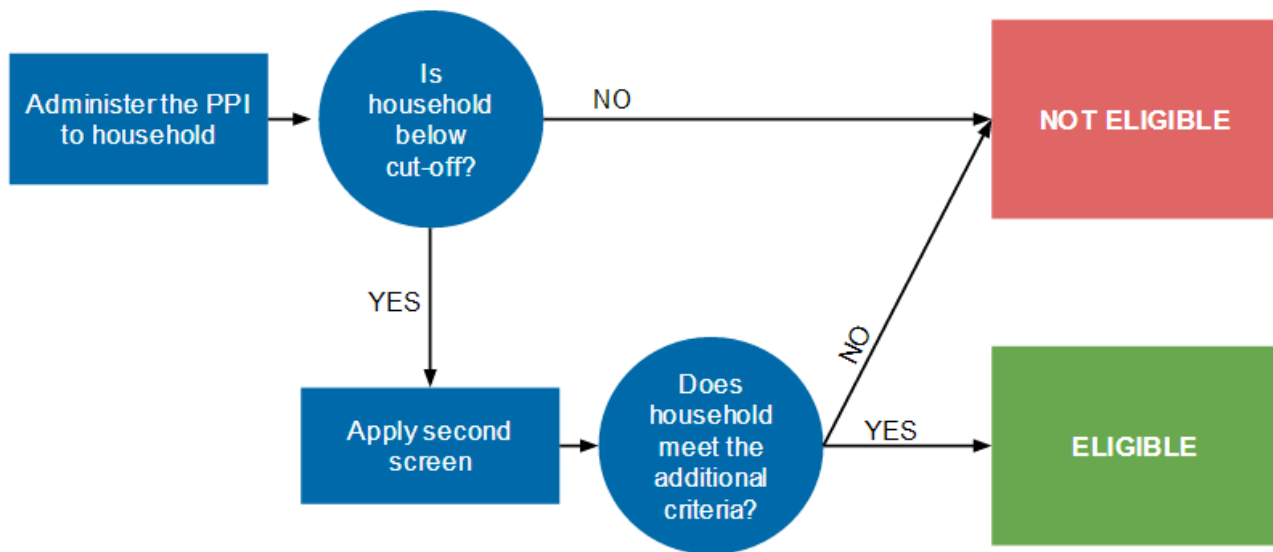
2. The PPI is given; all excluded households are further screened.

▶ Goal: Reduce undercoverage and increase inclusion.

▶ Consequence: The poverty rate will be lower than estimated poverty rate. The number of targeted households will increase.

Alternatively, the PPI could be administered after the first screen is applied. The goal and consequences will be the same as those above, depending on whether targeted households or excluded households are further screened. Since more households will be evaluated using the first screen, it is recommended that the least time-consuming screen be applied first.

These two methods only employ two screens. Organizations may employ as many as they like, keeping in mind the target client that is desired. Doing so may increase cost, so organizations must weigh the incremental increase in precision to the increase in cost for applying an additional screen.

Tracking changes in poverty over time

Over time, an organization can track the progress of a group of clients by monitoring the change in the estimated poverty rate. Suppose the same group of clients, from the previous example, is re-tested one year later and the portfolio likelihood is 70.0% below the national poverty line.

The change in the poverty rate is calculated by determining the difference (absolute value) between year one and year two.

82.4%- 70.0%= 12.4%

The group poverty rate has improved by 12.4 percentage points. Since this is a group of 3,000 clients, this result can also be interpreted as 372 out of 3,000 individuals moved out of poverty.

The 12.4 percentage point change is the **improvement in overall poverty rate.**

This result can also be examined in terms of the number of poor clients crossing the poverty line. We would then look at the number of clients moving out of poverty divided by the number of below the poverty line clients in year one.

- 2,472 clients (or 82.4% of the total 3,000) are below the poverty line in year one

- 2,100 clients (or 70.0% of the total 3,000) are below the poverty line in year two,

Therefore, 372 clients have crossed the poverty line from year one to year two (dividing 372 by 2,472 gives us 15.0%).

15.0% is the percentage of poor crossing the poverty line from year one to year two.

PPI Support from Grameen Foundation

Grameen Foundation's Social Performance Management Center is home to a global team of experts on poverty measurement with the PPI. Drawing from years of experience working with hundreds of organizations, we have designed a suite of training and support services to help PPI users succeed.

Below are descriptions of typical services in demand among PPI users. If you are looking for a different type of support, we are happy to discuss a custom solution.

For a menu of services, visit www.progressoutofpoverty.org/grameen-foundation-services or email spm@grameenfoundation.org.