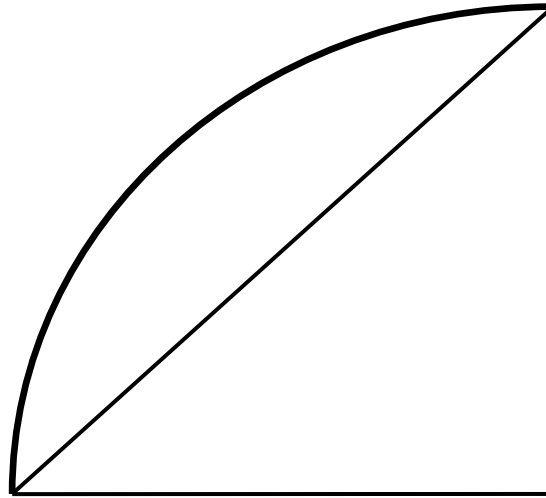# Poverty Scoring for Myanmar

Mark Schreiner

microfinance.com

UNDP/Myanmar

Yangon, 1 August 2012

UNDP Objectives for Poverty Scoring

1. **Estimate participants' poverty rates:**

   — **Compare across villages, townships, etc.**
   — **Measure change (impact?) over time**
   — **Report single summary number**
   — **Manage social performance**

2. **Target services to poorer:**

   — **Households (livelihood grants)**
   — **Areas (place offices in townships, choose villages to serve in given township)**

Objectives for Today

- **Learn where Myanmar's poverty scorecard comes from and how it works**

- **Discuss options for targeting**

- **Present possible operational processes for:**
    — **Sampling**
    — **Data-entry**
    — **Quality control**
    — **Managing targeting exceptions**

What Does Poverty Scoring Do?

Using verifiable data that is quick and low-cost to collect, it estimates likelihood/probability that a household's consumption is below an objective poverty line with known accuracy.

Use it to measure/manage social performance:

1. % of participants < poverty line now
2. Change in % below line over time
3. Target services to poorer HHs or areas

Scoring is quick, low-cost, quantitative, and often 'good enough for govt. work'

3

<u>Countries w/Poverty Scorecards</u>

Afghanistan	El Salvador	Mexico	Rwanda
Bangladesh	Ethiopia	Morocco	Russia
Benin	Ghana	Mozambique	Senegal
Bolivia	Guatemala	Myanmar	Sierra Leone
Brazil	Haiti	Nepal	South Africa
Burkina Faso	Honduras	Nicaragua	Sri Lanka
Cambodia	India	Nigeria	Syria
China	Indonesia	Pakistan	Tanzania
Colombia	Jordan	Palestine	Timor-Leste
Dominican Rep.	Kenya	Peru	Uganda
Ecuador	Malawi	Philippines	Vietnam
Egypt	Mali	Romania	Yemen

>90% of people below $1.25/day

live in the 48 countries with a poverty scorecard

Poverty Scoring and Wealth Ranking

Scoring:
— Defines poverty narrowly (value of consumption)

— Looks at broad patterns among 10 indicators

— Based on IHLCA data, has known accuracy

— One standard for entire Union

— Quantitative and consistent, so comparable across villages and over time

— Requires skilled enumerator

Wealth Ranking:
— Defines poverty holistically/comprehensively

— Looks at each HH, can adjust for exceptional cases

— Based on participatory judgment, unknown accuracy

— Standard varies by village

— Subjective and so non-comparable

— Requires skilled facilitator

IHLCA Measure of Poverty Is Costly

Exhaustive household expenditure survey (2 half-days)

> Last week, did you eat carrots? How many?
>
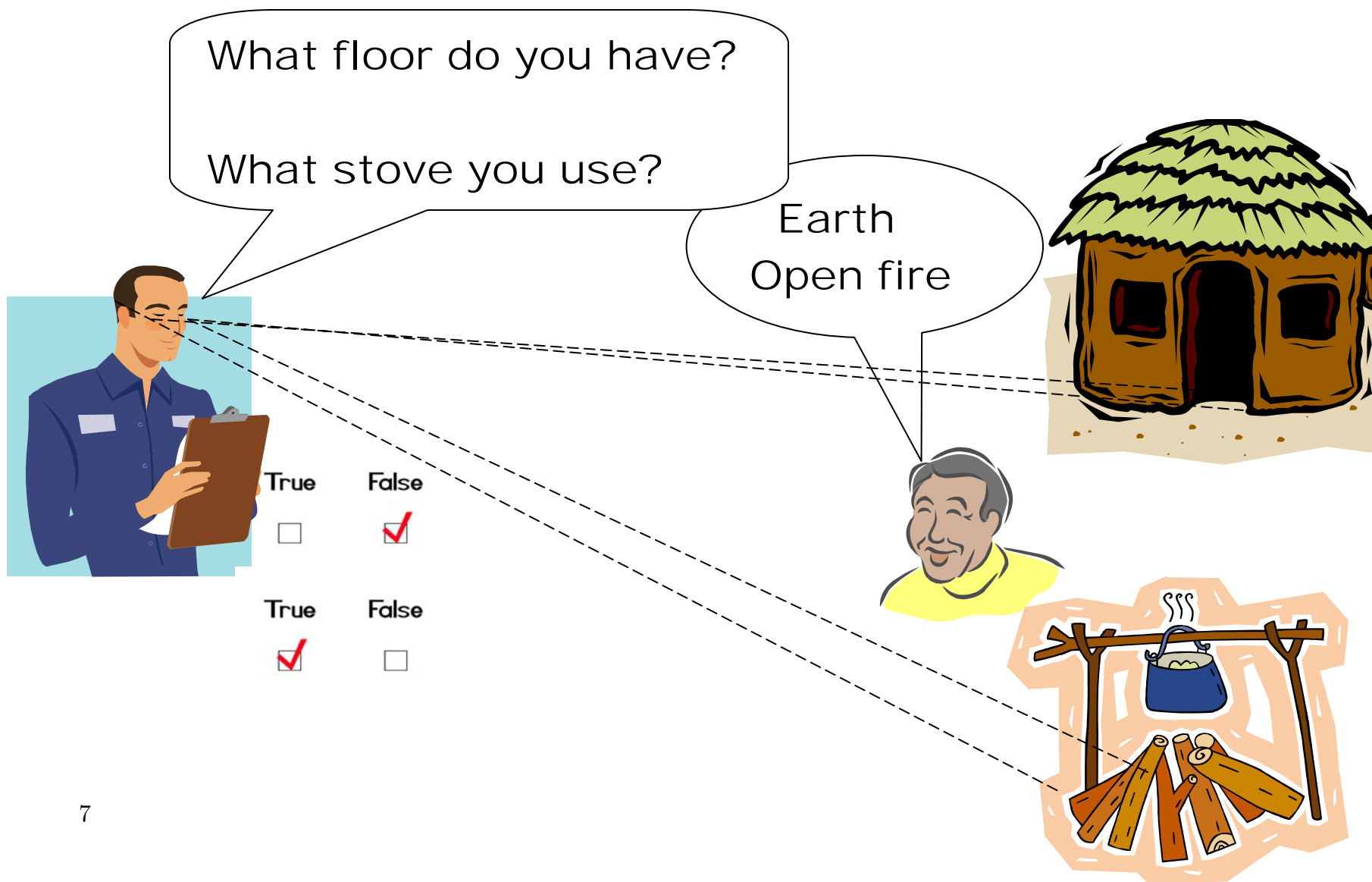> Did you buy them? What price would you have paid, if you had bought them?

> Yes. Ummm, 5, I think.
>
> No. I don't know.

Simple Poverty Scorecard for Myanmar

Location		Entity		Additional data	
Survey No.:		Village:		Name of HH head:	
Township:		Field office:		WR Class:	
City/town:		Date scored:		Started w/UNDP:	
Ward/village tract:		Enumerator:		# HH members:	

Indicator	Response	Points	Score
1. How many members does the household have?	A. Eight or more	0	
	B. Seven	6	
	C. Six	10	
	D. Five	14	
	E. Four	19	
	F. Three	26	
	G. One or two	34	
2. What is the highest standard/diploma/degree that the female head/spouse has passed?	A. No female head/spouse	0	
	B. None, KG, or first standard	1	
	C. Second standard	7	
	D. Third to fifth standard	8	
	E. Sixth standard or higher	9	
3. How many rooms does the household occupy, including bedrooms, living rooms, and rooms used for household businesses (do not count toilets, kitchens, balconies, nor corridors)?	A. One or none	0	
	B. Two	2	
	C. Three	3	
	D. Four	4	
	E. Five or more	9	
4. What is the major construction material of the floor (observe, do not ask)?	A. Earth/sand, palm/bamboo, combination earth and wood/palm/bamboo, or other	0	
	B. Wood planks, parquet or polished wood, tongue-and-groove wood, cement, wood with covering, cement with covering, or a combination of cement/finished wood and something else	5	
5. What is the major construction material of the external (outer) walls (observe, do not ask)?	A. Thatch/large leaves/palm/*dhani*, or tarpaulin	0	
	B. Bamboo, or rudimentary wood	2	
	C. Unbaked brick and mud, finished wood, or other	3	
	D. Baked brick and cement, or *pucca* cement	9	
6. What type of stove is used most often for cooking food in the household?	A. Open fire, open stove, rice-husk stove, or traditional closed stove	0	
	C. A1 improved stove, other improved stove, stove using electricity, gas, kerosene/diesel, or biofuel, or other	4	
7. Does any member of your household own or have access to a cupboard or a food-storage cabinet (including one rented to others or pawned)?	A. Neither	0	
	B. One, but not both	1	
	C. Both	5	
8. Does any member of your household own or have access to a black-and-white or colour TV (including one rented to others or pawned)?	A. No	0	
	B. Yes	9	
9. Does household member own or have access to a bicycle or non-motorized boat, a motorcycle, power tiller, trishaw, motorboat, trawlarjee, three-wheeled motor vehicle, motorcar (4 wheels or more), or tractor (including one rented to others or pawned)?	A. No, none of these	0	
	B. Only bicycle or non-motorized boat	4	
	C. Motorcycle, power tilller, trishaw, motorboat, trawlarjee, three-wheeled motor vehicle, motorcar (4 wheels or more), or tractor (regardless of bicycle or non-motorized boat)	8	
10. If any household member's main job is connected with agriculture, hunting, forestry, fishery, mining, or quarrying, and if any household member owns or has the right to use land for agriculture, forestry, pasture, livestock breeding, or water surfaces, then does the household own any non-draught oxen, non-draught buffalo, cows, mythun, horses, or donkeys/mules (including ones rented to others or pawned to others)?	A. Landless agricultural household	0	
	B. Non-agricultural household	1	
	C. Agricultural household with land, but no non-draught large animals	4	
	D. Agricultural household with land and with non-draught large animals	8	

Microfinance Risk Management, L.L.C., `microfinance.com` **Score:**

Worksheet:
Household Roster and Main Job

At the start of the interview, read the following to the respondent:

Please tell me the names and ages of all the persons who usually sleep in the dwelling, eat most of their meals here, and share expenses together. You should include all members of the family, including any children or other persons who may be away for study or work but who consider this as their permanent residence. It also includes any other people who are not blood relatives but who normally sleep here, eat most of their meals here, and share expenses.

Write the names and ages of all household members. For each member 10-years-old or older, ask the respondent whether he/she in his/her main job is connected to agriculture, hunting, forestry, fishery, mining, or quarrying. Count the total number of household members, write it next to "# household members" on the right side of the header of the scorecard, and use it to mark the response to Question 1. You will use the responses related to the main job of each member later when marking Question 10.

Name of household member	Age	In his/her main job, is <name> connected to agriculture, hunting, forestry, fishery, mining, or quarrying?
1.		No Yes
2.		No Yes
3.		No Yes
4.		No Yes
5.		No Yes
6.		No Yes
7.		No Yes
8.		No Yes
9.		No Yes
10.		No Yes
11.		No Yes
12.		No Yes
13.		No Yes
14.		No Yes
15.		No Yes

How is a Scorecard Constructed?

- **Derived from data from Myanmar's 2009/10 IHLCA**

- **For IHLCA HHs, consumption-based poverty status (poverty line of MMK1,010/person/day) is known**

- **I use statistics (not just my judgment) to select indicators and to assign points to reflect how indicators are linked with poverty status**

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

Scorecard Feedback and Revisions

- **3 draft scorecards to find 17 finalist indicators**
- **4th draft after HDI managers rate finalists**
- **Pilot w/200 HH in Ayeyarwady, Kayin, Shan:**
  - **About 10 interviews/day/enumerator**
  - **Measure overlap of scoring and wealth ranking**
- **5th (final) draft after pilot**
- **Overall impact of feedback:**
  - **Avoided some indicators that vary by region**
  - **Replaced indicator field staff found backwards**
  - **Replaced indicator that ignored land quality**
  - **Many smaller adjustments**
  - **Improved 'Guidelines' and training materials**

- **Final scorecard balances goals/constraints of IHLCA, data, users**

What Do Poverty Scores Mean?

Score	Poverty Likelihood (%)
0–4	83.4
5–9	76.1
10–14	68.6
15–19	60.4
20–24	48.8
25–29	41.6
30–34	29.5
35–39	23.3
40–44	15.0
45–49	10.6
50–54	7.4
55–59	3.5
60–64	1.2
65–69	1.0
70–74	0.3
75–79	0.0
80–84	0.0
85–89	0.0
90–94	0.0
95–100	0.0

HHs who score 19 have a 60.4% probability (poverty likelihood) of being below the national poverty line

Source of poverty likelihoods?

Score	HH < line		HH in range		Pov. like. (%)
0–4	142	÷	170	=	83.4
5–9	732	÷	961	=	76.1
10–14	1,344	÷	1,958	=	68.6
15–19	2,466	÷	4,081	=	60.4
20–24	3,038	÷	6,226	=	48.8
25–29	3,922	÷	9,428	=	41.6
30–34	3,026	÷	10,276	=	29.5
35–39	2,804	÷	12,044	=	23.3
40–44	1,797	÷	11,946	=	15.0
45–49	1,234	÷	11,663	=	10.6
50–54	699	÷	9,427	=	7.4
55–59	278	÷	7,970	=	3.5
60–64	76	÷	6,094	=	1.2
65–69	39	÷	3,767	=	1.0
70–74	6	÷	2,249	=	0.3
75–79	0	÷	1,180	=	0.0
80–84	0	÷	357	=	0.0
85–89	0	÷	199	=	0.0
90–94	0	÷	4	=	0.0
95–100	0	÷	0	=	0.0

Score = 19 → poverty likelihood of 60.4% because 2,466 of 4,081 IHLCA HHs (60.4%) w/scores 15–19 have consumption < pov. line

Three Uses of Poverty Scoring

1. **Estimate poverty rates at point in time:**
   - — One summary number for reporting
   - — Set goals and track progress (all-UNDP, district, field office)
   - — **'You manage what you measure'**

2. **Track changes in poverty over time:**
   - — Scoring does not tell *why* poverty changed (to measure impact, plan for control group)

3. **Target clients or areas:**
   - — Enter/exit areas based on their poverty
   - — Set goals for poverty rate of new participants
   - — Allot budget by number of poor being served
   - — Qualify individual HH for livelihood projects

1. Estimating Poverty Rates

A group's estimated poverty rate is the average of its members' poverty likelihoods.

Sample of 300 clients, 01jan13

Clients	Score 1/1/13	Poverty likelihood (%)
100	20	48.8
100	30	29.5
100	40	15.0
Average(=Poverty rate %):		31.1

2. Tracking Change in Poverty Rates

Estimate a group's poverty rate twice, then take the difference.

300 clients, 01jan13 and 31dec15

	Score		Poverty likelihood (%)	
Clients	2013	2015	2013	2015
100	20	25	48.8	41.6
100	30	30	29.5	29.5
100	40	45	15.0	10.6
Average(=Poverty rate):			31.1	27.2

Clients' poverty rate fell by

(31.1 – 27.2) = 3.9 percentage points.

3.9 ÷ 31.1 = 12.5% of poor clients left poverty.

3. Targeting Households

Cut-off	% of all HHs targeted	Pov. rate among targeted	% of poor HHs targeted
<=4	0.2	58.8	0.5
<=9	1.1	77.4	4.1
<=14	3.1	68.2	9.9
<=19	7.2	62.1	21.0
<=24	13.4	56.5	35.6
<=29	22.8	49.1	52.7
<=34	33.1	43.5	67.9
<=39	45.1	37.5	79.6
<=44	57.1	33.2	89.3
<=49	68.8	29.2	94.4
<=54	78.2	26.6	97.8
<=59	86.1	24.5	99.4
<=64	92.2	23.0	99.8
<=69	96.0	22.1	100.0
<=74	98.3	21.6	100.0
<=79	99.4	21.4	100.0
<=84	99.8	21.3	100.0
<=89	100.0	21.2	100.0
<=94	100.0	21.2	100.0
<=100	100.0	21.2	100.0

33.1% of all HHs score 34 or less.

43.5% of targeted HHs are < pov. line.

67.9% of poor HHs are targeted.

Example 5-Class System

	Cut-off	% of all HHs targeted	Pov. rate among targeted	% of poor HHs targeted
E	<=4	0.2	58.8	0.5
	<=9	1.1	77.4	4.1
	<=14	3.1	68.2	9.9
	<=19	7.2	62.1	21.0
D	<=24	13.4	56.5	35.6
	<=29	22.8	49.1	52.7
	<=34	33.1	43.5	67.9
C	<=39	45.1	37.5	79.6
	<=44	57.1	33.2	89.3
B	<=49	68.8	29.2	94.4
	<=54	78.2	26.6	97.8
A	<=59	86.1	24.5	99.4
	<=64	92.2	23.0	99.8
	<=69	96.0	22.1	100.0
	<=74	98.3	21.6	100.0
	<=79	99.4	21.4	100.0
	<=84	99.8	21.3	100.0
	<=89	100.0	21.2	100.0
	<=94	100.0	21.2	100.0
	<=100	100.0	21.2	100.0

Targeting Geographic Areas

- **Exit/remain** in current townships/villages:
  - — Exit places serving the fewest poor
  - — Sample (if you will not target HHs if you stay), otherwise census

- **Enter new** townships/villages:
  - — Narrow down possible areas:
    - ▪ For state/regions and districts, use IHLCA
    - ▪ For townships, use WFP rankings
    - ▪ Consult district/township officials
  - — Score candidate villages w/sample or census

- **Other** area-targeting approaches (McCarty):
  - — Allot budget in proportion to poor served
  - — Enter only poorest areas, serving all there
  - — Integrate scorecard in GoM Population Census
  - — Make scorecard using only indicators in Census

Example Poverty Estimates from Pilot

	n	Share < Natl. line (%)		
		All	71 UNDP targeted	Lowest 71 scores
Delta	74	29	38	45
Kayin	53	25	49	56
Shan	70	24	39	48
All pilot	197	26	41	49

All Myanmar (IHLCA): 21%. All rural: 25%

Overlap, Scoring/Wealth Ranking

	Scoring	
	Targeted	**Non-targeted**
WR Targeted	47	24
Non-targeted	24	102

- WR targeted 71 of 197 HHs

- Among lowest-scoring 71, overlap w/those targeted by WR was **2 in 3**

- Among highest-scoring 126, overlap w/those not targeted by WR was **4 in 5**

- Scoring and WR define 'poverty' differently. Neither is right or wrong, but WR is incumbent

How to Deal with Exceptions?

What if HH was targeted by WR but not by scoring? (or vice versa)

- **Not an issue in new areas or if not targeting**

- **Enumerator must see something scoring misses:**
    - **Disabled**
    - **Small, elderly HH with low income**
    - **Large HH with many earners and few dependents**

- **Exceptions are permitted (abuse is not):**
    - **If targeted now, qualify regardless of score?**
    - **Adapt current WR system for exceptions to manage exceptions for scoring**
    - **Limit # or % of HHs in area who can be excepted**

22

Getting Field Staff 'Buy-In'

- **UNDP staff know/trust wealth ranking. In their minds, WR is 'right', and scoring is scary (and sometimes makes targeting mistakes)**

- **Field staff can undermine scoring if they want**

- **Challenge is not statistical (we know how well scoring works if used properly) but rather getting organizational change so that it is used properly**

- **Transparency helps staff understand how scoring works and thus accept its value**

- **Listen to staff in process of feedback and revision**

- **Plan to permit reasonable exceptions**

Data Quality

- **Quality of scoring data matters because it drives decisions that affect poor HHs**

- **Scorecard is transparent to get field-staff 'buy-in' when they understand and accept its usefulness**

Rule: **Follow IHLCA practice when applying scoring**

- **All enumerators must be trained (MY materials available) and follow 'Guidelines to Interpretation'**

- **To discourage cheating, 'social auditor' (like financial auditor) should interview random sample a second time and compare answers to original**

Fitting Scoring with Current Processes

- **CDFs are enumerators**

- **Admin. assistants supply CDFs w/paper scorecards, key data, back up data, send data to Yangon**

- **Adapt existing WR processes for:**
  - **Managing exceptions**
  - **Tracking who has been scored**
  - **Tracking HHs' targeting status**

- **UNDP/Yangon analyzes data, sets goals, measures progress, reports results, relates poverty data with other data**

- **2–3 teams of 2 'social auditors' tour Union**

Roll-out

- **Sampling approaches:**

  — To estimate poverty rates to target areas, random sample of HHs in current or potential villages

  — To target particular HHs, census all HHs

- **Approaches to roll-out:**

  — **Big push**: Scoring is main job of CDFs until done

  — **Combine trips**: For a few months, CDFs score HHs who they happen to meet as part of regular project work. Then do 'small push' for a few weeks to score all remaining HHs

Use Scoring Data to Manage

- **To target**, score HHs in 2012/13 (or when evaluating potential new project villages)
  - Could use WR to target HH, and scoring to target villages and measure change/impact. Depends on:
    - Costs
    - Whether scoring targets accurately enough
  - Or use scoring for all purposes

- **To measure change**, score again at project end (2015)

- **To measure UNDP's impact**, compare change between project villages and controls (best controls are villages that UNDP almost picked but did not, or HHs in project villages just above targeting cut-off)

FOR MEASURING POVERTY AND TARGETING THE POOR, POVERTY SCORING IS

SIMPLE,

LOW-COST,

QUANTITATIVE,

TRANSPARENT,

and

OF KNOWN ACCURACY.