

More on Targeting

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Politics matters

- Development and poverty reduction are intrinsically political
- Reaching the poorest is a particular challenge
 - Do they deserve it? Will richer & more powerful groups support investments for the poorest?
- Research shows that politics has been central to the success and failure of social protection
- Politics viewed here as an enabling as well as constraining force

Basic Concepts of Targeting

- Gains from targeting
 - Targeting helps improving cost-effectiveness by channeling resources for a target group
 - To equalize quality or provide enriched quality to demand-constraint households.
 - For example
 - For SSN, demand can be infinite (for cash) or up to saturation (in-kind) which implies a need for targeting
 - For some services, such as basic health and education, the goal may be universal access, but targeting of fees or of promotion may be needed.
 - To channel public resources where finance is mixed public/private – e.g. to decide for whom to offer subsidies for health insurance, or to whom to offer fee waivers;

Key concepts of Poverty

- Poverty measurement
 - **The number of poor people** - count how many people live in households with per capita income below the poverty line
 - **The poverty headcount ratio (or poverty rate)** – fraction of the population which lives below the poverty line
 - **The budget needed to eradicate poverty (know as Poverty Gap)** – sum of the household poverty gap
 - **The poverty gap index** – average distance separating poor households from the poverty line
 - **The poverty severity index** – inequality among the poor

Key concepts of targeting

- Poverty headcount and Poverty Gap
- Cost of the program
- Coverage of the program
- Leakage of the program
- Share of benefits going to the poor
- Impact on poverty and inequality outcomes

Question

| Known Data of the country | | |
|---|---------|------------------------|
| (1) Population | 10,000 | Persons |
| (2) Poverty line | 1,000 | \$ |
| (3) Poverty headcount | 20% | of population |
| (4) Average poverty gap of the population | 6% | |
| (5) Leakage rate | 15% | of non poor |
| (6) Undercoverage | 20% | of poor |
| (7) Administrative costs | 20,000 | \$ |
| (8) Targeting cost | 10 | \$ per targeted person |
| (9) Number of poor | 2,000 | Persons |
| (10) Budget needed to cover gap | 600,000 | CU |

| Scenario | #1 | #2a |
|--|-----------------|--------------------|
| | No Leakage | |
| | Uniform benefit | Perfectly targeted |
| Program budget | 600,000 | 600,000 |
| Program caseload | | |
| Administrative cost | | |
| Targeting cost (10\$) | | |
| Net Budget: without costs | | |
| Benefit level | | |
| Average poverty gap of the poor | 300 | 300 |
| Share of the benefit level and the average poverty gap of the poor | | |

Solution

| Scenario | #1 | #2a |
|--|-------------------|--------------------|
| | <i>No Leakage</i> | |
| | Uniform benefit | Perfectly targeted |
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| | <i>No Leakage</i> | |
| | Uniform benefit | Perfectly targeted |
| Program budget | 600,000 | 600,000 |
| Program caseload | 10,000 | 2,000 |
| Administrative cost | 20,000 | 20,000 |
| Targeting cost | 0 | 20,000 |
| Net Budget: without costs | | |
| Benefit level | | |
| Average poverty gap of the poor | 300 | 300 |
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| Program budget | 600,000 | 600,000 |
| Program caseload | 10,000 | 2,000 |
| Administrative cost | 20,000 | 20,000 |
| Targeting cost | 0 | 20,000 |
| Net Budget: without costs | 580,000 | 560,000 |
| Benefit level | | |
| Average poverty gap of the poor | 300 | 300 |
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Solution

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| Program caseload | 10,000 | 2,000 |
| Administrative cost | 20,000 | 20,000 |
| Targeting cost | 0 | 20,000 |
| Net Budget: without costs | 580,000 | 560,000 |
| Benefit level | 58 | 280 |
| Average poverty gap of the poor | 300 | 300 |
| Share of the benefit level and the average poverty gap of the poor | 19% | 93% |

| Known Data of the country |
|---|
| (1) Population |
| (2) Poverty line |
| (3) Poverty headcount |
| (4) Average poverty gap of the population |
| (5) Leakage rate |
| (6) Undercoverage |
| (7) Administrative costs |
| (8) Targeting cost |
| (9) Number of poor |
| (10) Budget needed to cover gap |

| Scenario | #2b |
|--|--------------------------------|
| | With Leakage and Undercoverage |
| | Not perfectly targeted |
| Program budget | 600,000 |
| Program caseload | |
| Administrative cost | |
| Targeting cost (10\$) | |
| Net Budget: without costs | |
| Benefit level | |
| Average poverty gap of the poor | 300 |
| Share of the benefit level and the average poverty gap of the poor | |

Solution

| Scenario | #1 | #2a | #2b |
|--|-------------------|--------------------|--------------------------------|
| | <i>No Leakage</i> | | With Leakage and Undercoverage |
| | Uniform benefit | Perfectly targeted | Not perfectly targeted |
| Program budget | 600,000 | 600,000 | 600,000 |
| Program caseload | 10,000 | 2,000 | 2,800 |
| Administrative cost | 20,000 | 20,000 | |
| Targeting cost | 0 | 20,000 | |
| Net Budget: without costs | 580,000 | 560,000 | |
| Benefit level | 58 | 280 | |
| Average poverty gap of the poor | 300 | 300 | 300 |
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| Program budget | 600,000 | 600,000 | 600,000 |
| Program caseload | 10,000 | 2,000 | 2,800 |
| Administrative cost | 20,000 | 20,000 | 20,000 |
| Targeting cost | 0 | 20,000 | 28,000 |
| Net Budget: without costs | 580,000 | 560,000 | |
| Benefit level | 58 | 280 | |
| Average poverty gap of the poor | 300 | 300 | 300 |
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| Administrative cost | 20,000 | 20,000 | 20,000 |
| Targeting cost | 0 | 20,000 | 28,000 |
| Net Budget: without costs | 580,000 | 560,000 | 552,000 |
| Benefit level | 58 | 280 | |
| Average poverty gap of the poor | 300 | 300 | 300 |
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| Administrative cost | 20,000 | 20,000 | 20,000 |
| Targeting cost | 0 | 20,000 | 28,000 |
| Net Budget: without costs | 580,000 | 560,000 | 552,000 |
| Benefit level | 58 | 280 | 197 |
| Average poverty gap of the poor | 300 | 300 | 300 |
| Share of the benefit level and the average poverty gap of the poor | 19% | 93% | 66% |

Solution

| Scenario | #1 | #2a | #2b |
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Targeting instrument: PMT

- What is it?
 - PMT (or scoring formula) is a method to estimate household welfare without requiring detailed information about household welfare.
 - PMT is very useful when large share of household welfare is derived from hard-to-verify sources such as:
 - Informal sector
 - Own production
 - Agricultural production
 - Entrepreneurial activities

Targeting instrument: PMT

- How does it work?
 - Rather than measure total welfare of the household perfectly, we collect some information about the household that are first all correlated with poverty , also easier to measure and to verify such as:
 - Family composition
 - Employment
 - Housing characteristics
 - Ownership of durable goods
 - Geographical location

Targeting instrument: PMT

- Multi-dimensional notion of poverty (politically palatable)
- Eligibility based on weighted index of observable characteristics (score), not easily manipulated and associated with poverty:
 - Variables and weights can be determined using regression (predictors) or principal components analysis
 - Variables typically include: location, housing quality, assets/durables, education, occupation and income, and a variety of others (disability, health, etc.)
- Appropriate in situations
 - with high degree of informality, seasonality, or in-kind earnings;
 - where chronic poor are the target group;
 - where benefits will be granted for long periods of time
- Fairly good results

- Overlap in approaches is common.
 - Bulgaria, Romania, Kyrgyzstan MT systems impute the income potential of land and livestock, thus using them as proxies
 - Brazil uses PMT-models to check unverified declared means
 - Chile, Armenia PMT have some income questions on their form

Targeting instrument: PMT

- Mathematically, we can represent the model as

$$\ln \frac{y_i}{size_i} = Y_i = \alpha + X_{ij} \times \beta_j + \varepsilon_i$$

where X_{ij} are the j characteristics of the household i , and β_j are the PMT weights that will be generated, ε_i is the model error for each household i , y_i is the household welfare (income or consumption) and $size_i$ is the number of members of household i .

PMT score

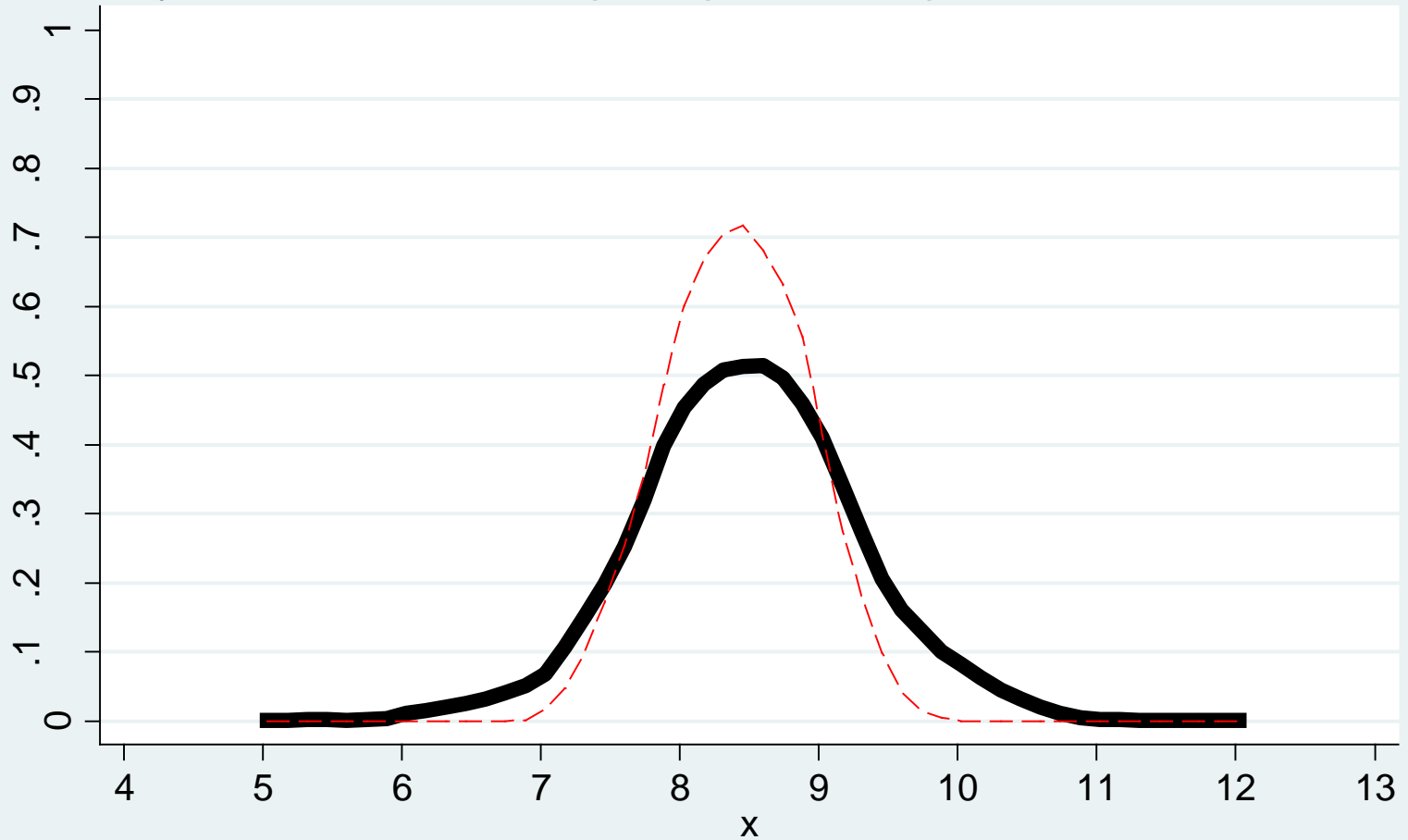
$$\text{PMTscore}_m = \hat{Y}_m = \hat{\alpha} + Z_{mj} \times \hat{\beta}_j$$

$$\text{PMTscore}_m = \exp(\hat{Y}_m) = \exp(\hat{\alpha} + Z_{mj} \times \hat{\beta}_j)$$

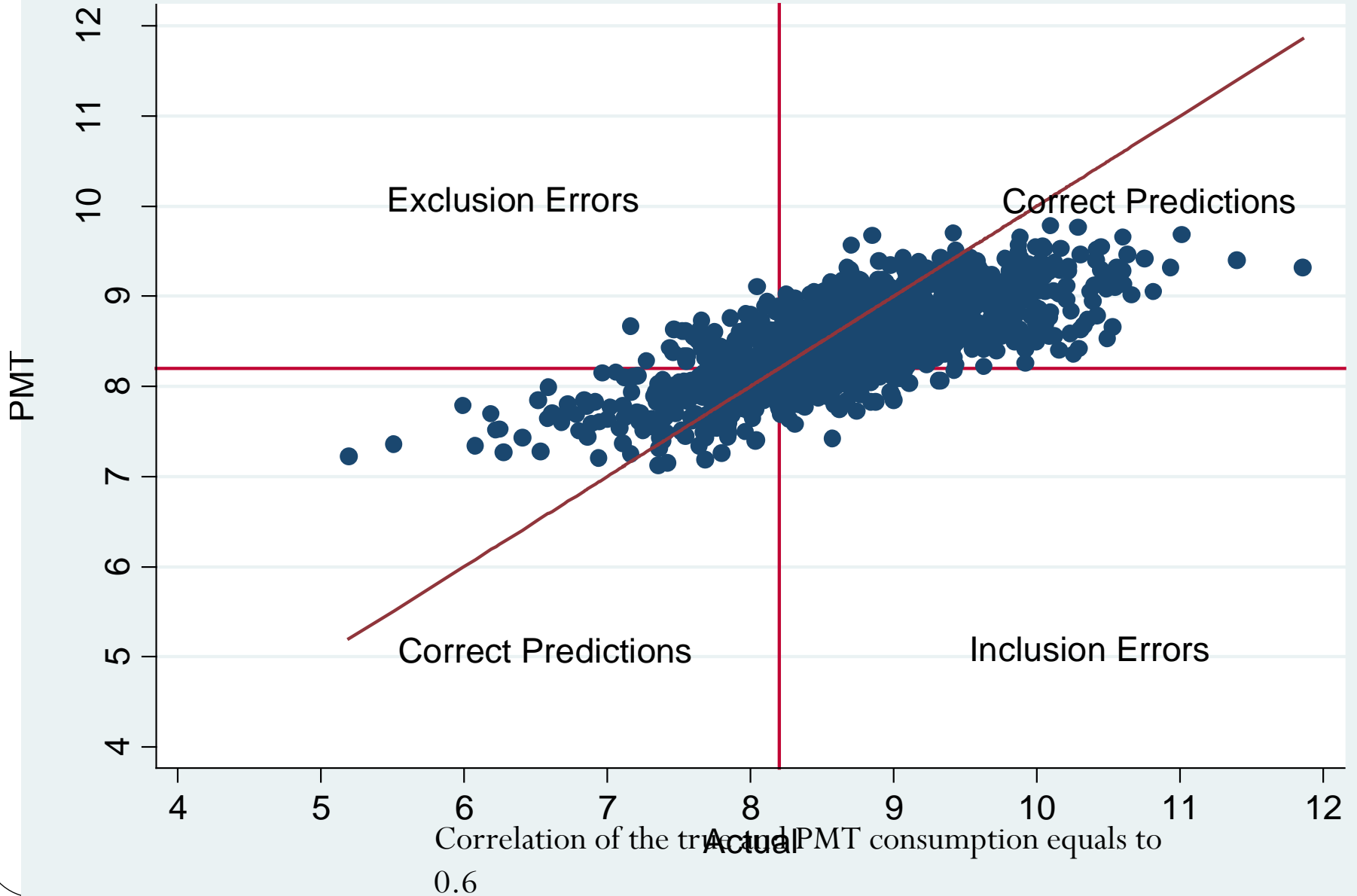
- Therefore, once the PMT weights are estimated in the household survey and applied on the program database, we can estimate the welfare of the household by the PMTscore.

PMT score

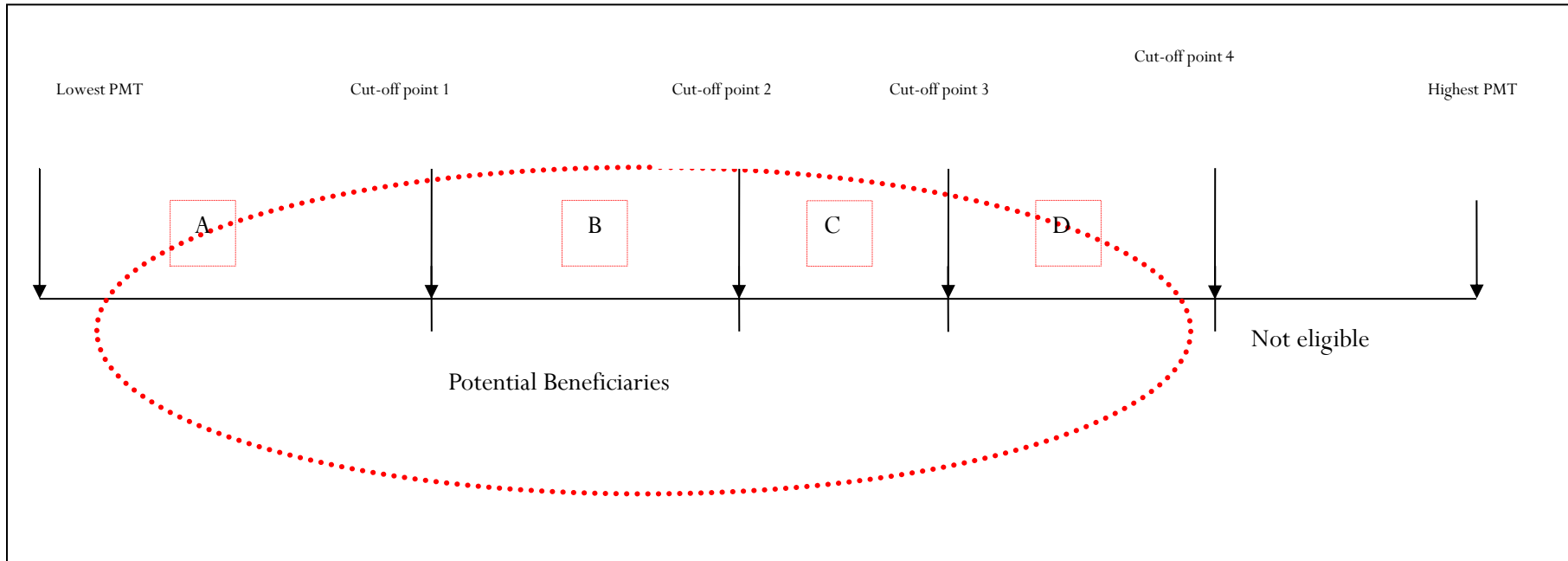
Density function of household per capita consumption in West Bank and Gaza



Scatter plot of actual and predicted welfare in West Bank and Gaza



What is the cut-off point?





Country cases: Indonesia, Rwanda, Niger, Ghana, Kenya, Cambodia, Afghanistan and Tanzania

methods: CBT vs. PMT or Mixed

Facts

- CBT, as PMT, does generate inclusion and exclusion errors – Indonesia and Kenya
- CBT may generate conflict and divisiveness – Niger and Afghanistan
- CBT may reinforce existing power structures or patterns of exclusion – Niger, Tanzania and Indonesia
- Local perceptions vary – Cambodia, Indonesia, Niger, Ghana
- High satisfaction levels but generates elite capture , and gives preference for those more connected or to a particular group – Tanzania, Indonesia and Cambodia
- Local knowledge helps identifying the poorest of the poor – Ghana and Indonesia
- While focusing on methods low attention is given to implementation arrangements – all cases



Country cases: Indonesia, Rwanda, Niger, Ghana, Kenya, Cambodia, Afghanistan and Tanzania

methods: CBT vs. PMT or Mixed

Fiction

- CBT has low (on the books) administrative cost and easier to implement than PMT - Tanzania, Ghana and Indonesia
- CBT has low Cost for the community – Indonesia and Tanzania
- CBT generates great legitimacy of the process – Niger, Tanzania and Kenya
- CBT works better than PMT – Ghana, Rwanda, Indonesia and Tanzania
- Targeting can be easily improved by combining CBT and PMT – Indonesia, Ghana, Afghanistan, Cambodia and Tanzania
- PMT process can be managed by the community to improve targeting – Kenya and Tanzania



Country cases: Indonesia, Rwanda, Niger, Ghana, Kenya, Cambodia, Afghanistan and Tanzania

methods: CBT vs. PMT or Mixed

MIXED - improving the community decision making processes

- CBT list and PMT validation experience is mixed – Indonesia, Ghana, Tanzania and Kenya
 - Length of list matters & PMT validation to trim the “richest”
- Attention to match list names and questionnaires - Ghana and Afghanistan
- CBT-PMT may reduce inclusion errors because combining both subjective judgment with objective criteria helps minimizing targeting errors – Rwanda, Tanzania and Ghana

Implementation arrangements

- Strengthen sensitization and Implementation arrangements – Indonesia, Tanzania and Niger
- Short List prepared by the community, PMT & Community validation – Tanzania and Kenya
- Full list, PMT and Community validation - Niger



Country cases: Indonesia, Rwanda, Niger, Ghana, Kenya, Cambodia, Afghanistan and Tanzania

methods: CBT vs. PMT or Mixed

Technical Requirements

- Intensive outreach to decision-makers
- Cohesive, well-defined communities

Appropriate Circumstances

- Strong community structures, political economy

- Attention is needed to
 - Cost to communities
 - Scalability
 - Improve administrative practices
 - Quality of data
 - Training
 - Information
 - Field supervision
 - Transparency

Gains of combining methods

- a. Can reduce both exclusion and inclusion errors
- b. More engagement of communities and villager (transparence in the process)
- c. Can generate more horizontal equity



Conclusion

- Targeting is complex
- A single method does not dominate another
- Combination can work but attention is needed on the implementation arrangements
- Implementation arrangements have much in common:
 - Verification strategies – home visit versus computerized cross-checks of databases
 - Outreach, re-certification, quality control, system design, staffing, etc.



Conclusion

- ✓ Combining methods may improve accuracy
 - Often a first step is geographical targeting
 - Then collect some information at the household-level
 - Triangulate from several sources:
 - Respondent
 - Community
 - Administrative records at local and central level
 - Grievance and redress mechanisms
- No matter which combination, implementation is key.