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**To Target or Not to Target?
The cost efficiency of indicator-based targeting**

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Introduction

- Most development programs are poorly targeted at the population in need.
- Low targeting efficiency is an impediment to achieving the Millennium Development Goals.
- E.g. Malawi 2000/01 Starter Pack, 2006/07 Agricultural Input Subsidy Program (AISP).
- Is an indicator-based system more target- and cost-efficient than the current methods used for targeting development programs in Malawi?

Research Objectives

- Develop & validate an indicator-based system for targeting Malawi's poor.
- Estimate the costs of targeting development programs using the system.
- Compare the performances of the system to previous programs.

Data and Methodology

- Second Malawi Integrated Household Survey data (IHS2-2005).
- Poverty measured by consumption expenditures & national poverty line.
- Initial sample split into two: 67/33
 - calibration sample to estimate the model;
 - validation sample to predict the status of the poor.
- Estimation method: Quantile regression & stepwise selection of variables.

$$y_i = \beta_j x_{ij} + e_i$$

y_i the dependent variable, x_{ij} a set of poverty predictors; β_j a vector of parameter estimates; e_i the random error term.

Table1. Selected targeting ratios

Targeting ratios	Definitions
Poverty Accuracy	Number of poor correctly predicted, expressed as a percentage of the total number of poor.
Undercoverage	Error of predicting the poor as non-poor, expressed as a percentage of the total number of poor.
Leakage	Error of predicting non-poor as poor, expressed as a percentage of the total number of poor.

Source: Adapted from IRIS (2005).

- Costs of targeting estimated following Besley and Kanbur (1993):

$$T = P + NP + A + H$$

T: total program cost; P: value of transfers given to the poor; NP: value of transfers given to the non-poor (costs of leakage); A: administrative costs; H: hidden costs (private, indirect, social, and political costs).

- Targeting efficiency measured by (Besley and Kanbur, 1993):

$$F = P * 100 / (P + NP)$$

$$F_1 = (NP + A + H) / P$$

$$F_2 = P * 100 / (P + NP + A + H)$$

F: transfer to the poor as a % of total transfer; F1: costs of transferring one unit of resources to the poor; F2: transfer to the poor as a % of total cost.

Selected References

- Besley, T. and Kanbur, R. (1993). The Principles of Targeting: In Including the poor, eds. M. Lipton and J. Van Der Gaag, Conference Proceedings.
- Dorward, A., Chirwa, E., Kelly, V., Jayne, T., Slater, R., and Duncan, B. (2008). Evaluation of the 2006/07 Agricultural Input Subsidy Programme. Final report, Malawi.
- Smith, J. W. (2001). Spending on Safety Nets for the Poor: How much, for how many? The case of Malawi. Africa Region Working Paper No. 11. Washington D.C.: The World Bank.

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Empirical Results

Table 2. Targeting performances of Starter Pack and AISP Vs. Indicator-based system

Program type	Poverty accuracy (%)	Undercoverage (%)	Leakage (%)
Starter Pack	65.02	34.98	61.81
AISP ¹	54.00	46.00	54.00
Indicator-based system	71.48	28.52	26.65

Source: Own results based on Malawi IHS2 data. ¹Estimates based on Dorward et al. (2008).

- The new system is more target-effective: higher poverty accuracy (71%) and lower leakage (27%) compared to the Starter Pack and AISP.
- Nonetheless, the new system is not perfect at targeting the poor.

Table 3. Cost and transfer efficiency of Starter Pack and AISP Vs. Indicator-based system

Programs	Costs	Transfer to the poor	Costs of leakage	Administrative & hidden costs	Total costs	F	F ₁	F ₂
Starter Pack		562.61	534.84	205.16	1302.62 ¹	51.27	1.32	43.19
Starter Pack/ New system		649.97	242.33	410.33	1302.62	72.84	1.00	49.90
AISP		2777.51	2940.89	1069.02	6787.41 ²	48.57	1.44	40.92
AISP/ New system		3386.71	1262.67	2138.03	6787.41	72.84	1.00	49.90

Source: Own results based on Malawi IHS2 data. Cost estimates in million Malawi Kwacha (MK). ¹Cost of Starter Pack estimated based on Smith (2001). ²Net cost of main fertilizer (Urea and NPK) subsidy estimated based on Dorward et al. (2008).

- The new system transfers more resources: 73% of total transfer reach the poor compared to 51% and 49% under the Starter Pack and AISP, respectively.
- The new system is more cost-efficient: it costs MK1 for every MK transferred to the poor Vs. MK1.32 and MK1.44 under the Starter Pack and AISP, respectively.
- The costs of leakage are cut down by 50% under the new system.

Conclusions

This paper develops an indicator-based system for targeting Malawi's poor.

- Although not perfect, the system is more target- and cost-efficient compared to previous development programs in the country.
- Under the system, more resources are transferred to the poor at lower costs.
- Implication for Malawi: better target development policies using an indicator based-system.
- This research can be applied in other countries with similar targeting problems.