Incentivizing quality in the dairy value chain: A pre-analysis plan

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Motivation

Research design for a randomized control trial of scaling efforts under the Quality-Based Milk Payment Scheme (QBMPS) that was piloted by DDA and SNV last year in Uganda's SW milkshed.

Related Literature

Rao and Shenoy (2021) explore the effect of collective incentives on group production among rural Indian dairy cooperatives. In a randomized evaluation, they find village-level cooperatives can solve internal collective action problems to improve production quality. However, some village elites decline payments when they cannot control information disclosure. Opting out reflects frictions in allocating surplus within a social network, and suggests some transparency-based efforts to limit elite capture may undermine policy goals.

Hypotheses and Interventions

Experimental design and power calculations

We randomly allocate quality testing equipment to eligible milk collection centers (MCCs), which agree to implement some kind of quality bonus to suppliers. In a cross-cutting design, at the farmer level, we will randomly allocate training

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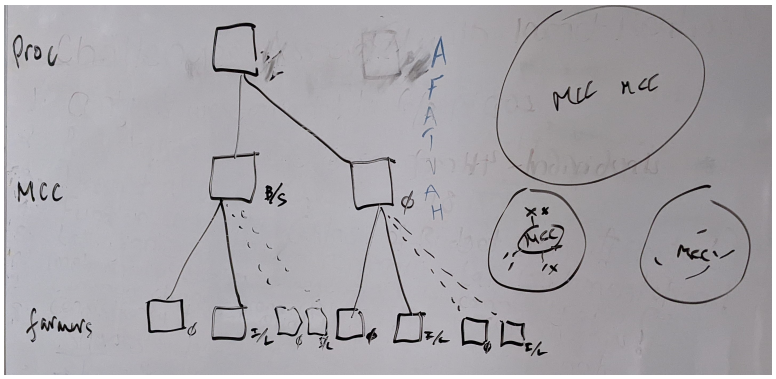

Figure 1: Design

on quality parameters and linkages with production management decisions, as well as distribute lactometers, which serve as partial quality indicators.

Sampling

Context and study area

Specifications

Data collection and endpoints

Outcomes of interest at MCC level: average milk quality levels (for different quality parameters); milk purchase price and volume; milk sales channel (to whom sold), price, volume and profits. Outcomes of interest at farmer level: perceptions of control of output quality parameters; willingness to experiment; changes in production investments and management; milk quality levels (for different quality parameters); milk sales channel (to whom sold), price, volume and profits.

Ethical clearance

Transparency and replicability

To maximize transparency and allow for replicabiliy, we use the following strategies:

- pre-analysis plan: the current document provides an ex-ante step-by-step plan setting out the hypothesis we will test, the intervention we will im-

plement to test these hypothsis, the data tha will be collected and specifications we will run to bring the hypotheses to the data. This pre-analysis plan will be pre-registered at the AEA RCT registry.

- revision control: the entire project will be under revision control (that is time stamped track changes) and committed regularly to a public repository (github).
- mock report: After baseline data is collected, a pre-registered report will be produced and added to the AEA RCT registry and GitHub. This report will differ from the pre-analyisis plan in that it already has the tables filled with simulated data (drawn from the baseline). The idea is that after the endline, only minimal changes are necessary (basically connecting a different dataset) to obtain the final result, further reducing the opportunity of specification search.

References

Rao, M. and A. Shenoy. 2021. "Got (clean) milk? governance, incentives, and collective action in Indian dairy cooperatives."