



Methodological Validation and Research on Root Crops
Collaboration LSMS- Global Strategy
Measuring Cassava
Productivity in Zanzibar and Malawi

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Global Strategy
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Overview

- On-going experiments on agriculture & livestock carried out by the LSMS team, in collaboration with partners
 - Aligned w/ Global Strategy to Improve Agricultural & Rural Statistics, Livestock Data Innovation in Africa (LDIA) Program
 - Informed by field experience, country-level interactions
 - Underlined by iterative, peer review

Research Areas

- Land area
- **Crop production (continuous crops)**
- Soil fertility
- Labor
- Skill testing
- Milk production
- Pastoralist populations

Measuring production

- Farmers don't keep records
- Crops like cassava harvested in small quantities over several months
- Recall widely used but does not always work
- Measured in non-standard units of varying size
- Different units along the value chain, different states
- What are the alternatives?
 - Need validation!

Quantifying cassava



Is using diaries an option?

- Compare recall and diary methods for crop production estimates (and consumption from own production) in Uganda
 - Lack of gold standard
 - “well-administered” diary?
 - Crop cutting?
 - Does it vary by crop type?
 - Extended-harvest crops
 - » Cassava
 - » Banana

Deininger, Carletto and Savastano (2012). “Can Diaries Help Improve Agricultural Production Statistics? Evidence from Uganda.” *Journal of Development Economics*

Measuring Cassava Productivity in Zanzibar

Objective

- To test the accuracy and feasibility of various methods for the measurement of cassava productivity, in two districts in Zanzibar, Tanzania.

Implementing Partners

- Ministry of Agriculture and Natural Resources (MANR), Zanzibar
 - Experiment being conducted by MANR Block Extension Officers (BEOs)
- Office of the Chief Government Statistician (OCGS), Zanzibar

Measuring Cassava Productivity in Zanzibar (cont'd)

- The experiment foresees the collection of cassava production data using **four different methodologies**, namely:
 - (1) a diary, assisted through frequent visit by local Block Extension Officers (BEOs);
 - (2) a diary, assisted through frequent phone calls to the farmers from a call center established as part of the project;
 - (3) two six-month recall interviews; and
 - (4) a 12-month recall visit.

In addition, crop cutting is being carried out on one random plot per cassava farm.

- Land areas for all cassava plots is being measured using several methods, including compass-and-rope, GPS and farmer's self-reporting.

Measuring Cassava Productivity in Zanzibar (cont'd)

Sampling

- 1,260 households across two districts in Zanzibar:
 - 864 households in North B district in Unguja
 - 396 households in Chake Chake district in Pemba
- Each Block Extension Officer (BEO) responsible for 36 households in 1-2 Shahias
 - 24 BEOs in North B and 11 in Chake Chake

Zanzibar: Experiment on Cassava Productivity Measurement

Summary of the Methodology

Land Area	Cassava Production
Compass and rope GPS measurement	Crop-cutting with balance scales → for one randomly selected cassava field for all households
Farmer self-reported area (to be conducted for all cassava fields owned and/or cultivated by all households)	315 D1 households: crop diaries with BEO visits twice a week 315 D2 households: crop diaries with telephone calls twice a week 315 R1 households: farmer self-reported harvest (6-month recall) 315 R2 households: farmer self-reported harvest (12-month recall)

Measuring Cassava Collaboration with Global Strategy

ZANZIBAR

- In Zanzibar, the experiment is conducted by LSMS Team and fieldwork started in May 2013 and is expected to be completed in April 2014.

MALAWI

- Preliminary lessons will be learned from Zanzibar experiment for designing a second experiment in Malawi.
- WB (LSMS) and FAO (Global Strategy) will work together to prepare and conduct the validation exercise in Malawi with funding from the research component of the Global Strategy.
- Preparation will start in the Fall but field work will depend on the season probably start early 2014
- LSMS Team has started identification of potential teams to do the fieldwork and put together a budget and define administrative and financial arrangements.



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THANK YOU

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