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

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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

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

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

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