



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

**GERO CARLETTO**

Development Research Group  
The World Bank

Presented by

**NAMAN KEITA**

FAO Statistics Division



**Global Strategy**  
IMPROVING AG-STATISTICS

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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  <b>(to be conducted for all cassava fields owned and/or cultivated by all households)</b>	315 <b>D1</b> households: crop diaries with BEO visits twice a week  315 <b>D2</b> households: crop diaries with telephone calls twice a week  315 <b>R1</b> households: farmer self-reported harvest (6-month recall)  315 <b>R2</b> 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**

[naman.keita@fao.org](mailto:naman.keita@fao.org)

