“New Agriculture” & Implications for Information Development and Diffusion: Perspectives from Zambia

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Zambia’s “Farming Ladder”
(from Gates Team Interview – GART Research Station meeting with Director)

Farming Ladder
- Commercial farmers
- Cell phone farmers
- Animal traction farmers
- Hand hoe farmers

Number of Farmers
- 1500
- 50,000 - 75,000 ?
- 335,058
- 932,087
Large Scale Commercial Farmers

- Lobby for interests of agriculture – helps small farmers
- Outgrower schemes – opportunities for smallholders
Giving Data Voice to Smallholders
Empirical Data in Zambia – Nation Wide Random Surveys

Map of Central Statistical Office Statistical Enumeration Areas (SEAs) Sampled in the CSO/MACO/FSRP Post Harvest and Supplemental Surveys in 2001 and 2004 by Zambia’s Agro-Ecological Zones
Smallholder Heterogeneity - Significantly Different Information Targeting Challenges

• Table 2. Production and Marketing Interactions: Zambian Smallholder Production and Marketing Behavior Patterns

• Table 3. Heterogeneity of Target Smallholders: Zambian Smallholder Household Income, Wealth and Demographic Attributes by Land Access and Education
Not All Smallholders in Zambia Are the Same: Farm Size (cultivated) Distribution

hectares

Ken Eth Rwa Moz Zam

bottom 25%
2nd
3rd
top 25%
Illustrations: Key Patterns of Smallholder Maize Production and Marketing 2000 & 2004 mkt years

- Some 80% of smallholders produce maize
- Only 25-28% of smallholders sell any maize
- Sales % of national production range 23/27 %
- Vast majority of maize produced is stored and eaten on the farm – traditional on-farm storage needs help
- Production and sales are highly correlated with area cropped to maize
- 35% of smallholders are net buyers (grain & meal)
- 37% not in the market as seller nor buyers
Illustrations: Relationships Between Landholding Size, Education & Welfare
(Table 3 bivariate)

• Income-poverty clearly associated with small farm size and low education (can’t study causality with this cross-section data)

• Within each landholding tercile, hh income /value crop sales increases 30-50 % between low and high education terciles

• Income is not so constrained by land in top education terciles due to off farm income. Conversely, off-farm income is relatively small for low education terciles

• 24 % female headed hhs overall, but female hhs are found disproportionately in bottom education & land terciles
New Agriculture – Responding to Markets Means We Need Better Information About African Urban Food Demand

• More than 50% of Africa’s population will be urban by 2015.
  – 2000: 10 farm households feed 7 non-farm households
  – 2020: 10 farm households feed 16 non-farm households

• Upshot: urban demand for food is rising rapidly
Information to Improve Rural – Urban Linkages: Urban Purchase Location & Units Driven by Urban Income Poverty
Information to Improve the Traditional Marketing Sector – It Is Close to Poor Consumers?
Crop Diversification - Role of Maize in Farm Cash Income is Declining (share of gross sales revenue)
Need to Understand Changing Market Demands

<table>
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<tr>
<th>Country</th>
<th>Maize</th>
<th>Other grains/beans/oilseeds</th>
<th>Non-food cash crops</th>
<th>Fruits - veges</th>
<th>Animal products</th>
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<td>7.7</td>
<td>16.7</td>
<td>27.5</td>
<td>14.7</td>
</tr>
</tbody>
</table>
Zambia - Highly Productive New Cassava Varieties Increasing Available
Can Production Growth Continue?

• Yes, farmers can increase output.
• But without growing commercial markets, production growth will stall
Example - Zambia’s Cassava Value Chain: Currently Subsistence Production Dominates

- **Consumption**
  - Subsistence households
  - Volume = 920,000 tons

- **Processing**
  - Subsistence Production
  - Cassava traders, dried chips
    - Vol = 45,000 tons (fresh equivalent) = 15,000 dry weight

- **Trade**
  - Vol = 10,000

- **Soaking, drying**
  - Traders, fresh
    - vol = 35,000 T

- **Farm production**
  - Channel 1.
    - Marketed Fresh Cassava for Human Consumption
  - Channel 2.
    - Processed Cassava for Human Consumption
  - Channel 3.
    - Livestock Feed
  - Channel 4.
    - Industrial Users
  - Channel 5.
    - Industrial processors

- **Exports**
  - Vol = 4,000 dry

- **Livestock**
  - Vol = 500 dry

- **Food processors**
  - Feed companies & livestock farmers
Channel 1. Subsistence
Commercial Channels Will Drive Future Growth

Consumption
- Subsistence households
  - Volume = 920,000 tons

Processing
- Cassava traders, dried chips
  - Vol = 45,000 tons (fresh equivalent)
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Trade
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Exports
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Purchases for human consumption
- Vol = 10,000

Livestock
- Vol = 500 dry

Industrial users
- Vol = 500 dry
Channel 4. Feeds
(Tiger Animal Feeds has begun buying cassava)
Dynamics of Information & Feedback for Value Chain Growth
Zambia – Field Visit
WorldAgInfo Information Insights

Household-Level Diversity
• 10 hhs produced enough for sale
• 20 hhs did not produce enough for consumption needs- had to buy some
• Female hhs expressed unique needs

Community Expressed Felt Needs
• Closer access to water
• Better & more roads
• Local access to electricity
• School buildings & teachers
• Extension advice working but weak (conservation farming practices starting to be used)
• Fertilizer –farmers willing to buy but need reliable retail outlets
• Women growing vegetables for urban mkt demand but need irrigation & better market access
Information for Policy - Public Resource Allocation for the Agricultural Sector Zambia 2007

- Strategic Food Reserves: 28%
- Fertilizer Support Programme: 21%
- Personnel Emoluments: 15%
- Grants and other payments: 1%
- Recurrent Departmental charges: 20%
- Infrastructure in Farm Blocks: 9%
- Other Poverty Reduction Programmes: 5%
- Capital Expenditure: 1%
New Agriculture - Policy Information Implications

• Many “knowledge gaps” about improving smallholder agriculture are systemic challenges
  – Access to roads and water
  – Access to land
  – Access to markets
  – Changing urban consumption patterns
• Overcoming these knowledge gaps to help develop policies and programs that can help smallholder farmers
Thank you to Zambian smallholders and to policy makers for the opportunity to obtain/share information and ideas