Facts about Zambia Agriculture Sector

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Lake Safari Lodge,
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Why this Presentation?

- Highlight key facts about Zambia’s Agriculture
  - Discuss key policy levers to achieve broad based pro-poor agricultural growth in the country

- Dialogue with Zambia’s Political Parties
  - can help influence agriculture policy changes that will change the structure of agriculture in order to achieve broad based poverty reduction.
Parts of the Presentation

- Role of agriculture in poverty reduction
- Overview of the agricultural sector in Zambia
- Facts About Pro Poor Agricultural Growth
  - Cross country evidence
  - Recent Zambia Agricultural evidence
- Conclusions
Role of Agriculture in Poverty Reduction

- In countries where the share of agriculture in overall employment is large, broad-based growth in agricultural incomes is essential to stimulate growth in the overall economy, including the non-farm sectors selling to rural people---IDA
Role of Agriculture in Poverty Reduction

- Productivity in agriculture leads to increased incomes and reduced poverty
- IFPRI, MSU have the same findings
- So how many people does agriculture employ in Zambia?
Employment by Category

- Agriculture employs 52.2% (2,872,331) of the total labour force compared to 1.6% (88,251) employed by the mines

Why are Mines Famous?

- GRZ reports that up to 45% of its revenue is from the mines
- GRZ reports that mines earn from 60 to 95% of foreign exchange
- Import heavy economy like Zambia the mines will be important
- Mines are visible and easier to tax
### Overview

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Estimate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Area</td>
<td>752,614 km² (75 million hectares)</td>
</tr>
<tr>
<td>Population</td>
<td>13.6 million (2010 Census)</td>
</tr>
<tr>
<td>Total labour force</td>
<td>4.39 million</td>
</tr>
<tr>
<td>Rural population</td>
<td>64%</td>
</tr>
<tr>
<td>Female labour force</td>
<td>45%</td>
</tr>
<tr>
<td>Administration</td>
<td>10 provinces, 106 districts</td>
</tr>
<tr>
<td>Literacy</td>
<td>74%</td>
</tr>
</tbody>
</table>
## Overview

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Estimate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Climate</td>
<td>Tropical</td>
</tr>
<tr>
<td>Temperature</td>
<td>13°C - 34°C</td>
</tr>
<tr>
<td>Rainfall</td>
<td>600mm - 1400mm</td>
</tr>
<tr>
<td>Water resource</td>
<td>40% of water resource in SADC region</td>
</tr>
<tr>
<td>Woodlands</td>
<td>353,729 km² (47%)</td>
</tr>
<tr>
<td>Arable land</td>
<td>42 million hectares (58%)</td>
</tr>
<tr>
<td>Grazing land</td>
<td>32 million ha (42%)</td>
</tr>
<tr>
<td>Cultivated area</td>
<td>10.5 million ha (14%)</td>
</tr>
</tbody>
</table>
Zambia’s Economic Achievements

- Zambia
  - Classified as low-middle income by World Bank
  - GDP growing at 6% per annum
  - Agricultural growth rate at 7% - above 6% CAADP Goal
  - Good maize harvests including three bumper harvests

BUT Persistently high rural poverty: ≈80%
Facts About Pro Poor Agricultural Growth
About RALS

Collaborative effort with CSO and Ministry of Agriculture

Complements PHS and CFS

Nationally Representative

Longitudinal Survey
• RALS 2012
• RALS 2015

Multiple funders
Distribution of Standard Enumeration Areas, RALS 2015
Cross Country Evidence

- Agricultural R&D
- Extension services
- Livestock production and disease control
- Rural infrastructure i.e. feeder roads
- Irrigation
2015 Zambia Agriculture Budget Allocation

- FRA and FISP taking too much
- Staff receive salaries but delayed release of operational funds

<table>
<thead>
<tr>
<th>Program</th>
<th>% of others</th>
</tr>
</thead>
<tbody>
<tr>
<td>Personnel Emoluments</td>
<td>62</td>
</tr>
<tr>
<td>Capital Expenditure</td>
<td>21</td>
</tr>
<tr>
<td>Grants &amp; other payments</td>
<td>13</td>
</tr>
<tr>
<td>All others</td>
<td>4</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Program</th>
<th>% of PRPs</th>
</tr>
</thead>
<tbody>
<tr>
<td>FISP</td>
<td>56</td>
</tr>
<tr>
<td>FRA</td>
<td>42</td>
</tr>
<tr>
<td>All others</td>
<td>2</td>
</tr>
<tr>
<td>Total PRP</td>
<td>100</td>
</tr>
</tbody>
</table>
Government expenditure on FISP is benefiting mostly the larger and relatively already well off HHs with very little impact on yields and poverty reduction.
## Land size, poverty and FISP in Zambia

<table>
<thead>
<tr>
<th>Total area cultivated</th>
<th>Number of farms</th>
<th>% of farms</th>
<th>Poverty Rate (%)</th>
<th>% of farmers receiving FISP fertilizer</th>
<th>kg of FISP fertilizer received per farm household</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-0.99 ha</td>
<td>596,334</td>
<td>39.6</td>
<td>81</td>
<td>14</td>
<td>24.1</td>
</tr>
<tr>
<td>1-1.99 ha</td>
<td>499,026</td>
<td>33.1</td>
<td>81</td>
<td>31</td>
<td>69.3</td>
</tr>
<tr>
<td>2-4.99 ha</td>
<td>354,116</td>
<td>23.5</td>
<td>66</td>
<td>45</td>
<td>139.7</td>
</tr>
<tr>
<td>5-9.99 ha</td>
<td>49,410</td>
<td>3.3</td>
<td>38</td>
<td>59</td>
<td>309.7</td>
</tr>
<tr>
<td>10-20 ha</td>
<td>6,999</td>
<td>0.5</td>
<td>15</td>
<td>53</td>
<td>345.6</td>
</tr>
<tr>
<td>Total</td>
<td>1,505,885</td>
<td>100</td>
<td>76</td>
<td>29</td>
<td>77.1</td>
</tr>
</tbody>
</table>

Source: RALS 2012
Maize productivity effects of FISP

- Mason and Tembo 2014
  - All factors constant
    - 1 kg of FISP fertilizer \( \rightarrow \) 2.0-3.8 kg maize
    - 200 kg FISP packet \( \rightarrow \) 401.2 to 756.6 kg
  - Uneconomical productivity response to fertilizer at commercial prices
    - Average commercial fertilizer price ZWK 400 per 50 kg
    - FRA price ZWK 75 per 50 kg
    - Breakeven response rate (not including transactions costs)= 5.32 kg of maize per Kg of fertilizer
Price supports on maize help very few farmers, and actually hurt many rural and urban households.
## Maize Sales  RALS 2015

<table>
<thead>
<tr>
<th></th>
<th>Households</th>
<th>Land cultivated</th>
<th>Maize Sold</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Number</td>
<td>Percent</td>
<td>Hectare</td>
</tr>
<tr>
<td>Maize sellers</td>
<td>690,885</td>
<td>52.5</td>
<td>2.56</td>
</tr>
<tr>
<td>Top 50% of maize sales</td>
<td>59,961</td>
<td>4.6</td>
<td>6.87</td>
</tr>
<tr>
<td>Rest of all other maize sales</td>
<td>630.924</td>
<td>47.9</td>
<td>2.15</td>
</tr>
<tr>
<td>Non maize sellers</td>
<td>625,562</td>
<td>47.5</td>
<td>1.38</td>
</tr>
</tbody>
</table>
Many smallholder households are land constrained

- 66.5% cultivate less than 2 ha of land
Land cultivated categories (RALS 2015)

- Less than 0.5 Ha: 10.8%
- 0.5 to 1 Ha: 21.5%
- >1 to 2 Ha: 34.2%
- >2 to 5 Ha: 27.7%
- Greater than 5 Ha: 5.8%
Percent of smallholder that say “There is NO land available”
Why are Zambia Farmers land constrained?


Settlements concentrated on areas with infrastructure

Hence, the land constraints in a land-abundant country is not a paradox

Considerable land is covered by water, national parks, GMA

Under Appreciated Fact # 4

Excessive FRA participation in the maize market reduces private sector participation
Zambia: Food Reserve Agency market participation has been increasing over time

- Buying beyond budgeted target
- Delayed payments
- Government ad hoc policies reducing private sector participation
Zambia 2013/14 bumper harvest experience

- Government committed:
  - to buy less
  - charge commercial mills economic prices for maize from the FRA
- Resulted in increased trader activity, higher spot prices for farmers, and increased production the following season.
Maize import and export bans do not help to keep grain prices within reasonable bounds for consumers and producers?
When grain prices spike above import parity, consumers are being unnecessarily taxed by an inefficient market

Import ban/restriction

When grain prices fall below export parity, producers are denied income opportunities from crop sales

[Export Ban]
Export bans and trade restrictions

- Generally doesn’t stop trade from occurring but raises smuggling costs, which depress prices for farmers and raise costs for consumers.
The majority of farmers selling maize to a private trader do it in their village even in the most remote and isolated areas

- Long distances traveled by about 10% of the smallholder population to sell maize is generally not indicative of severe market access problems
- Reasonable degree of competition among village level grain assembly traders exists.
## Distance to nearest largest maize sale transaction to private assembly traders

<table>
<thead>
<tr>
<th>Percentile of farm household distribution</th>
<th>Distance to nearest Boma (km)</th>
<th>Distance to nearest private assembly traders (km)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean</td>
<td>37</td>
<td>6.9</td>
</tr>
<tr>
<td>10\textsuperscript{th}</td>
<td>6.0</td>
<td>0.0</td>
</tr>
<tr>
<td>25\textsuperscript{th}</td>
<td>13.0</td>
<td>0.0</td>
</tr>
<tr>
<td>50\textsuperscript{th}</td>
<td>30.0</td>
<td>0.0</td>
</tr>
<tr>
<td>75\textsuperscript{th}</td>
<td>58.0</td>
<td>3.0</td>
</tr>
<tr>
<td>90\textsuperscript{th}</td>
<td>80.0</td>
<td>21.0</td>
</tr>
</tbody>
</table>

Sources: Zambia: MACO/CSO Crop Forecast Surveys 2011
Market intermediation by traders bridge the geographic distances between farmers and urban markets weakening the link between geographic location and market access.

So called “Briefcase Traders” play a key role in providing a market for farmers in remote and isolated areas.
Political economy of public resource allocation

Government budget

- Long-term productive investments: R&D, infrastructure, education, etc.
  - High social payoffs
  - But payoffs come 5-20 years later
  - Critical for sustained poverty reduction

- Input subsidy programs
- Marketing board price supports
  - Immediate political payoffs;
  - Visible support to constituencies
  - Contribution to sustained growth / poverty reduction is unclear
Conclusion & Recommendations

- Zambia has:
  - potential to have broad-based economic growth;
  - potential to address the stubbornly high rural poverty rates and high malnutrition;
  - potential to be the ‘breadbasket for the region’;
  - **But**: Policies should evolve and take advantage of the many agricultural opportunities arising from the rising food demand, rising urban incomes and the changing consumption patterns.
Thank You