Agricultural Policy Reforms in Zambia

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Africa Lead CAADP Leadership Course
Champions for Change
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1. About IAPRI

2. Overview of Zambia’s agricultural sector
   - Zambia Ag. development goals
   - Key agricultural policy challenges hindering broad-based agricultural growth in Zambia

3. Political economy landscape in Zambia
   - Who makes agricultural policies?
   - Whose interests count?

5. Conclusion
• MSU/Food Security Research Project
  – In existence since 1999
  – USAID/Zambia Associate Award - $12.5m over 5 years
  – Embassy of Sweden through SIDA [Jan 2008 - Dec 2011]
  – FSRP III strategic objectives under Zambia FTF
    a. Transforming from a project into a local institution (IAPRI)
    b. Supporting the CAADP process, incl. helping Ministry of Ag & Livestock (MAL) develop CIP
    c. Supporting Zambia FTF multiyear strategy (Ag. Policy reforms through policy analysis and outreach)
    d. Building analytical capacity of MAL, Central Statistical Office and University of Zambia (UNZA) through effective collaboration.
Overview of Zambia’s Agricultural Sector

• Zambia is characterized by:
  – Rapid population growth
  – Population ≈13 million (64% rural) in 2010
  – Stubbornly high rural poverty rate: ≈80%
  – High food and income inequality in urban areas
  – Rapid urbanization & increasing demand for food
  – Stagnant agricultural productivity (yields)
Zambia Ag. Development Goals

1. Reduce poverty through broad-based income growth for those in agricultural sector
2. Attain 90% household food security and cut hunger by 50% by 2015
3. Grow the agriculture sector from 1% to 7-10% per annum
4. Increase agriculture contribution to foreign currency earning from 3-5% to 10-20%
Data on Smallholder Farmers in Zambia

Nation Wide Random Surveys
CFS/PHS/SS 99/00 = 364 SEAs
CFS 2006/07 onward = 660 SEAs
Fig 1: Poverty Levels in Zambia 1991-2006 and 2010 (unofficial estimates)

- Estimated range of 74-78% for 2010 (unofficial estimates)

Source: Central Statistical Office, Govt. Zambia
Fig 2: Sector Contribution to Gross GDP

Source: Central Statistical Office, Govt. Zambia


Tertiary sector: Wholesale and Retail trade, Restaurants, Bars and Hotels, Transport, Storage and Communications, Rail, Road and Air Transport, Communications, Financial Intermediaries and Insurance, Real Estate and Business services, Community, Social and Personal Services, Public Administration and Defence, Education, Health, Recreation, Religious, Culture, Personal services
Many smallholder households are land constrained

-- 25% have less than 0.5 ha of land
-- 58% indicate there is no unallocated land in their village
Fig. 3: Farm Size For Small & Medium-Scale Farmers, 1999/2000 and 2006/07 Ag. seasons

Source: CSO/MACO/FSRP 2001 and 2008 National-Level Supplemental Rural Livelihood Survey
Why are Zambian Smallholder Farmers Land Constrained?

• Land constraints in a land-abundant country is not a paradox
  – economically viable arable land requires access to basic services, water, schools, roads, and markets
  – Rural settlement follows infrastructure developments

• The basic public investments to make settlement economically viable have yet been made in many areas of Zambia.
Fig 4. Population Density, Zambia

People per km²

- <=10
- >10 and <=25
- >25 and <=100
- >100 and <=250
- >250

Game Management Area
National Park
Policy Challenge # 1

• If > 40% of the smallholder farms are < 1 ha,
  – then a staple food-based agricultural system that is primarily rain-fed system with one growing season is unlikely to provide a viable pathway out of poverty.

• Since rural settlement follows infrastructure developments, the Government of Zambia (GRZ), needs to seriously consider basic infrastructure investments to make resettlements economically viable.
Nearly 50% of rural farm HHs are net buyers of maize

- 49% net buyers (45% buy only; 11% did not produce maize)
- 28% net sellers
- 23% produced but did not sell nor buy maize

Fig 5: Smallholder Farmers Maize Market Position

Source: CSO/FSRP- Supplemental Survey 2008
Under-Appreciated Fact # 3

• Highly concentrated patterns of maize surplus generation - 2% of smallholder farm households account for 50% of marketed maize
• Maize surplus generation is highly associated with area cropped and household assets
Table 1: Disparities in livelihoods within smallholder agriculture, Zambia – 2006/07

<table>
<thead>
<tr>
<th></th>
<th>N=</th>
<th>Farm size (ha)</th>
<th>Asset values (US$)</th>
<th>Gr. Rev., maize sales (US$)</th>
<th>Gr. Rev., crop sales (US$)</th>
<th>Total hh income (US$)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Top 50% of maize sales</td>
<td>30,150 (2%)</td>
<td>7.2</td>
<td>3,703</td>
<td>3,199</td>
<td>3,354</td>
<td>7,624</td>
</tr>
<tr>
<td>Rest of maize sellers</td>
<td>467,320 (31%)</td>
<td>1.9</td>
<td>257</td>
<td>172</td>
<td>252</td>
<td>1,272</td>
</tr>
<tr>
<td>Households not selling maize</td>
<td>1,010,014 (67%)</td>
<td>1.1</td>
<td>129</td>
<td>0</td>
<td>57</td>
<td>756</td>
</tr>
</tbody>
</table>

Source: CSO Supplemental surveys, 2008
Table 2: Disparities in livelihoods within smallholder agriculture, Zambia – 2010/11

<table>
<thead>
<tr>
<th></th>
<th>N=</th>
<th>Farm size (ha)</th>
<th>Ha farmed (ha)</th>
<th>Gross rev., maize sales (million kw)</th>
<th>Gross rev., crop sales (million kw)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Top 50% of maize sales</td>
<td>78,384</td>
<td>4.3</td>
<td>3.0</td>
<td>8.1</td>
<td>8.6</td>
</tr>
<tr>
<td></td>
<td>(5.2%)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rest of maize sellers</td>
<td>499,530</td>
<td>3.4</td>
<td>2.0</td>
<td>1.3</td>
<td>1.7</td>
</tr>
<tr>
<td></td>
<td>(33.2%)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Households not selling maize</td>
<td>927,971</td>
<td>2.2</td>
<td>1.2</td>
<td>0</td>
<td>0.2</td>
</tr>
<tr>
<td></td>
<td>(61.6%)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: CSO Crop Forecast Survey, 2011
Fig 6: Maize Production, Sales and Assets

Source: 2008 (07/08 Crop Marketing Season)
• How to effectively reform FRA and FISP programs?
  – Since smallholder maize sales are so concentrated, Food Reserve Agency (FRA) price-raising policies have highly regressive effects on income distribution
  – Higher maize prices hurt the majority of the population who are net maize buyers and relatively poor farmers
  – FISP if poorly implemented crowds out private sector participation
Policy Challenge # 3

• How to bring the bottom 60% of smallholder farmers into the market and raise them above the poverty line?
Under-Investment in Public Goods

• Past agricultural budgets have not placed enough emphasis on broad-based public investments
  - Over last 7 years, 50-70% of MAL budget spent on fertilizer subsidies (FISP) & maize price stabilization (FRA)
    o Politically popular but less effective than investments in research, extension, roads, and other public goods at stimulating agricultural growth
    o Crowd out/discourage private sector investment
    o Prone to diversion and manipulation
Fig 7: Proportion of MAL Budget Devoted to FRA and FSP/FISP (2001-2011), Zambia
Smallholder Farm Maize Sector Performance and Trends
Fig 8: Trends in Maize Production and Number of Small/Medium Scale Farm Households

Maize production (75% growth)
Fig 9: Maize area cultivated & average yields

<table>
<thead>
<tr>
<th>Year</th>
<th>Area Cultivated (hectares)</th>
<th>Average Yields (Mt/ha)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1995</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>1996</td>
<td>0</td>
<td>0.5</td>
</tr>
<tr>
<td>1997</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>1998</td>
<td>1</td>
<td>1.5</td>
</tr>
<tr>
<td>1999</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>2000</td>
<td>2</td>
<td>2.5</td>
</tr>
<tr>
<td>2001</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>2002</td>
<td>3</td>
<td>3.5</td>
</tr>
<tr>
<td>2003</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>2004</td>
<td>4</td>
<td>4.5</td>
</tr>
<tr>
<td>2005</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>2006</td>
<td>5</td>
<td>5.5</td>
</tr>
<tr>
<td>2007</td>
<td>6</td>
<td>6</td>
</tr>
<tr>
<td>2008</td>
<td>6</td>
<td>6.5</td>
</tr>
<tr>
<td>2009</td>
<td>7</td>
<td>7</td>
</tr>
<tr>
<td>2010</td>
<td>7</td>
<td>7.5</td>
</tr>
</tbody>
</table>

Pre FSP Era

FSP Era: Target
Yield 4-5 Mt/Ha
Figure 10: Average yields of key commodities compared to global average

Source: CFS datasets, various years with Global figures obtained from COMESA
Policy Challenge # 4

- Zambia maize-centric policies through FRA and FISP are stifling:
  - Crop diversification
  - Private sector investment & market participation
  - Investments in key agricultural growth drivers (e.g., irrigation, research and development, extension, feeder roads etc.)

→ *Stagnation of agricultural sector and stubbornly high rural poverty levels*
Rainfed Agriculture

- Rainfed agriculture → Zambian smallholders highly vulnerable to weather shocks

Fig 11: % of maize area planted to be harvested
Rainfed agriculture → Zambian smallholders highly vulnerable to weather shocks

Fig 12: Yield Response to Fertilizer use over time
Policy Challenge # 5

• How to reform agricultural policies to reduce the vulnerability and increase the resilience of smallholder ag production to weather-related shocks?
Unpredictable government intervention in maize market

- The rationale for continued state operations in food markets and trade is the perception that leaving the private sector to operate on its own may bring intolerable levels of price instability
- Strategic interactions between private and public sector in markets – the behavior of one affects the other
- If government actions in markets are discretionary and unpredictable, this may limit scope of private participation and trade
Competing models of roles of state and private sector in food markets:

**Model 1**
- Rely on markets
- State role limited to:
  - Public goods investment
  - Regulatory framework
  - Strengthening of institutions / defense of property rights
  - Policies supportive of private sector entry and competition

**Model 2**
- Primary reliance on markets
- But role for *rules-based* state operations
  - E.g., buffer stock release in response to defend stated ceiling price
  - Marketing board purchases at stated floor price announced in advance
  - Transparent rules for initiating state imports

**Model 3**
- Role for markets and discretionary state intervention
  - Based on premise that private sector cannot ensure adequate food supplies in response to production shortfalls
  - Justification for unconstrained role for state interventions in markets to correct for market failures
Strategic interactions between public and private sector in food markets

• 3 recurrent processes
National food production shortfall anticipated

Who’s going to import? And how much?

State announces plan to import X tons

State incurs delays in contracting for imports

Private traders sit on sidelines

Supplies dwindle; prices skyrocket

"EVIDENCE THAT MARKETS FAIL!"
National food production shortfall anticipated

Trader arranges to import; asks for waiver on import duty

Government delays in waiving import duty rate

Supplies dwindle; prices skyrocket

“EVIDENCE THAT MARKETS FAIL!”

Private sector delays importation; intrigue over timing of waiver
National food production / balance sheets indicate adequate harvest

Import licenses applied for but not granted

Prices rise as actual supplies dwindle

Supplies dwindle; prices skyrocket

“EVIDENCE THAT MARKETS FAIL!”

Charges of hoarding and trader manipulation of market
Fig 15: Lusaka Maize Retail Prices

Lusaka retail c.i.f. from South Africa

nominal US$ per metric ton

Common theme in all 3 processes:

• Government efforts to manage upside food price risk through discretionary trade policy instruments *can/have* exacerbated food crises

• The inability of parties to make commitments that the other party regards as credible → precludes course of action that could improve outcomes for both
Farmers’ Access to Markets and Services:
Maize Market Access in Zambia

1. Farmers have many possible options for selling their staples right in their villages

2. Median distance travelled from farm to point of maize sale = 0

3. Findings suggest:
   • Serious efforts to encourage market development and to ameliorate market failure to enable S/M farmers to produce a surplus are likely to require an increased commitment to investment in public goods-e.g.
     • more widespread use of grades and weight measures;
     • strategic investment in road and rail infrastructure;
     • research and development of crop varieties;
     • agricultural extension systems to raise smallholders’ productivity
“How many private traders come into this village to buy maize from farmers?”

<table>
<thead>
<tr>
<th>Province</th>
<th>Among maize sellers</th>
<th>Among non-sellers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Central</td>
<td>8</td>
<td>6</td>
</tr>
<tr>
<td>Copperbelt</td>
<td>16</td>
<td>17</td>
</tr>
<tr>
<td>Eastern</td>
<td>9</td>
<td>6</td>
</tr>
<tr>
<td>Luapula</td>
<td>11</td>
<td>11</td>
</tr>
<tr>
<td>Lusaka</td>
<td>8</td>
<td>7</td>
</tr>
<tr>
<td>Northern</td>
<td>9</td>
<td>8</td>
</tr>
<tr>
<td>NorthWestern</td>
<td>12</td>
<td>10</td>
</tr>
<tr>
<td>Southern</td>
<td>5</td>
<td>4</td>
</tr>
<tr>
<td>Western</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>National</td>
<td>9</td>
<td>7</td>
</tr>
</tbody>
</table>
## Distance from farm to point of maize sale, Zambia

<table>
<thead>
<tr>
<th>Distance to district town</th>
<th>10</th>
<th>25</th>
<th>50</th>
<th>75</th>
<th>90</th>
</tr>
</thead>
<tbody>
<tr>
<td>Most accessible 25%</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>1.6</td>
<td>8</td>
</tr>
<tr>
<td>Quartile 2</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>3</td>
<td>25</td>
</tr>
<tr>
<td>Quartile 3</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>3</td>
<td>35</td>
</tr>
<tr>
<td>Most remote 25%</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>3</td>
<td>60</td>
</tr>
<tr>
<td>Total sample</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>2</td>
<td>23</td>
</tr>
</tbody>
</table>

Source: MACO/CSO Crop Forecast Survey, 2009-2010 Marketing Season
## Distance from farm to point of maize sale, Zambia

<table>
<thead>
<tr>
<th>Bags sold</th>
<th>Mean</th>
<th>10</th>
<th>25</th>
<th>50</th>
<th>75</th>
<th>90</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt; 5 bags</td>
<td>3.61</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>1.6</td>
<td>8</td>
</tr>
<tr>
<td>5 - 25 bags</td>
<td>6.78</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>3</td>
<td>25</td>
</tr>
<tr>
<td>25 - 50 bags</td>
<td>7.33</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>3</td>
<td>35</td>
</tr>
<tr>
<td>&gt; 50 bags</td>
<td>10.84</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>3</td>
<td>60</td>
</tr>
<tr>
<td>All farms selling to private traders</td>
<td>7.14</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>2</td>
<td>23</td>
</tr>
</tbody>
</table>

Source: MACO/CSO Crop Forecast Survey, 2009-2010 Marketing Season
1. How can ag. policy provide broad-based benefits to rural farm households, in order to:
   1. Raise rural incomes
   2. Significantly reduce rural poverty
   3. Improve nutritional status of the poor

2. How to ensure tolerable food prices for urban and rural consumers?

3. How to achieve objectives 1 and 2 in a financially sustainable way?

4. How to deal with the effects of weather when smallholder agriculture is predominantly rainfed?
The challenge of improving farm productivity appears to have a straightforward solution:

– use the power of crop science to generate improved farm technologies,
– put these technologies into the hands of small farmers, and
– provide them with the knowledge to get the most out of these technologies.

The big question: why has this not happened in Zambia?
POLITICAL ECONOMY ISSUES
Who makes Agricultural Policy decisions in Zambia?

• MAL responsible for food policy
  – Mainly supply side policies, especially for maize
  – Technical aspects of food policy changes

• BUT, most **major** policy decisions coordinated by Cabinet w/ technical input from MAL Policy Analysis & Coordination Unit

• Other key players:
  – Ministry of Finance & National Planning
  – Bank of Zambia
  – Zambia Revenue Authority (ZRA)
Who makes Agricultural Policy decisions in Zambia?

• Since 1996, food price policy mainly implemented by FRA and ZRA

• Ultimately, all power in Cabinet vested with Head of State. Although a Minister can lobby, political interest tends to be a priority.

• Top lobby groups with access to State House
  – Zambia National Farmers Union (ZNFU) – represent interest of commercial farmers and the most successful smallholders. No effective representation of the issues affecting the bottom 60% of smallholders.
  – Millers Associations of Zambia (MAZ) – purportedly represent consumers through lobbying for subsidized grain but consumer subsidies rarely benefit consumers
Effectiveness of policy analysis in influencing policy reforms in Zambia?

- The policy wheels turn very slowly
  - Lack of political will
  - High turnover of key decision makers
  - Long process to get a Bill passed

- Technical input usually ignored at higher level until policy goes wrong

- How can we deal with these shortcomings under CAADP?
Why invest in Agriculture?

• Agriculture is a powerful poverty fighter
  – No country has ever achieved mass poverty reduction without a prior substantial boost in broad based agricultural productivity (Timmer, 2005)
  – Latin American experience shows that it is possible to achieve agricultural productivity growth on large farms without having much impact on poverty rates.
  – Need to raise broad based productivity of smallholder farmers in order to fight poverty.
Agricultural growth and poverty reduction in China
Thank You