Challenges of Smallholder Soya Bean Production and Commercialization in Eastern Province of Zambia

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Presented at the Provincial Agricultural Policy Dialogue at Protea Hotel, Chipata, 22 November 2013
Motivation

- Feed the Future program’s goal
  - Lifting more than a quarter of a million rural farmers out of poverty by 2015—Eastern Province

- Achieved through upgrading key value chains in the agric sector—including soya bean
  - Based on a number of agronomic and nutritional attributes as well as potential to generate income

- Despite these benefits, soya bean production remains low
  - Farmers perceive that soya markets are unreliable
  - Yet interviews with downstream actors suggest significant unmet demand for soya in Zambia
Motivation

- Large processing companies do not operate at full capacity due to the limited supply of soya beans
  - Mount Meru- processing capacity 70 thousand tonnes of soya beans, but as of 2012 was operating at less than 17 thousand tonnes
  - Tiger feeds-demand for soya is not met locally
    - Import already processed cake from South Africa and as far as India
- Supply of domestic demand
  - 15% smallholder farmers, 85% commercial farmers
Objectives of the study

- To identify the factors limiting smallholder linkages to the growing markets for soya in Zambia
- To provide concrete strategies on how to overcome them
Data sources

- Guided interviews with key actors along the chain
  - Lundazi, Chipata, Chadiza, Katete, Petauke, Lusaka
  - Conducted between March and April 2012

- National wide surveys
  - Various years of crop forecast surveys
  - Supplemental surveys
  - 2012 Rural Agricultural Livelihood Survey
Soya bean value chain - Eastern Province

**INPUT SUPPLY**
- Seed companies
- Fellow farmers/own harvest
- Agro dealers
- Large Corporation
- Smallholder farmers

**PRODUCTION**
- COMACO
- Medium scale traders
- Small scale/ Village assemblers
- Large wholesalers

**ASSEMBLY**
- COMACO
- Yummy soy
- Lusaka-based animal feed and oil processors

**WHOLESALE**
- Large scale Corporation Dunavant, Cargill
- Large wholesalers

**PROCESSING**
- COMACO
- Yummy soy
- Lusaka-based animal feed and oil processors

**RETAIL**
- Supermarkets
- Non-governmental Organization
- Exports markets

Major flows
Minor flows

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Over view of soya bean production
## Smallholder soya bean production over time by province

<table>
<thead>
<tr>
<th>Province</th>
<th>2001</th>
<th>2002</th>
<th>2003</th>
<th>2004</th>
<th>2005</th>
<th>2006</th>
<th>2007</th>
<th>2008</th>
<th>2009</th>
<th>2010</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Central</strong></td>
<td>942</td>
<td>1,387</td>
<td>2,384</td>
<td>3,557</td>
<td>4,318</td>
<td>4,860</td>
<td>1,431</td>
<td>4,809</td>
<td>10,629</td>
<td>6,929</td>
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<tr>
<td><strong>Copperbelt</strong></td>
<td>61</td>
<td>355</td>
<td>191</td>
<td>441</td>
<td>263</td>
<td>280</td>
<td>174</td>
<td>388</td>
<td>1,195</td>
<td>183</td>
</tr>
<tr>
<td><strong>Eastern</strong></td>
<td>3,542</td>
<td>2,258</td>
<td>2,281</td>
<td>3,316</td>
<td>8,877</td>
<td>5,496</td>
<td>5,138</td>
<td>6,695</td>
<td>7,847</td>
<td>7,260</td>
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<tr>
<td><strong>Luapula</strong></td>
<td>73</td>
<td>39</td>
<td>72</td>
<td>42</td>
<td>158</td>
<td>201</td>
<td>159</td>
<td>252</td>
<td>166</td>
<td>90</td>
</tr>
<tr>
<td><strong>Lusaka</strong></td>
<td>.</td>
<td>38</td>
<td>41</td>
<td>171</td>
<td>461</td>
<td>161</td>
<td>27</td>
<td>149</td>
<td>107</td>
<td>182</td>
</tr>
<tr>
<td><strong>Northern</strong></td>
<td>1,092</td>
<td>1,015</td>
<td>2,551</td>
<td>720</td>
<td>4,405</td>
<td>1,769</td>
<td>1,898</td>
<td>2,640</td>
<td>5,095</td>
<td>2,144</td>
</tr>
<tr>
<td><strong>N. Western</strong></td>
<td>84</td>
<td>40</td>
<td>106</td>
<td>28</td>
<td>102</td>
<td>313</td>
<td>263</td>
<td>549</td>
<td>613</td>
<td>549</td>
</tr>
<tr>
<td><strong>Southern</strong></td>
<td>11</td>
<td>15</td>
<td>95</td>
<td>201</td>
<td>40</td>
<td>35</td>
<td>41</td>
<td>392</td>
<td>474</td>
<td>1,081</td>
</tr>
<tr>
<td><strong>Western</strong></td>
<td>13</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>32</td>
<td>29</td>
<td>17</td>
<td>11</td>
<td>39</td>
<td>92</td>
</tr>
<tr>
<td><strong>All Zambia</strong></td>
<td>5,818</td>
<td>5,147</td>
<td>7,721</td>
<td>8,477</td>
<td>18,656</td>
<td>13,144</td>
<td>9,148</td>
<td>15,885</td>
<td>26,165</td>
<td>18,510</td>
</tr>
</tbody>
</table>

Source: CSO/MAL 2001-2010
Total soya bean production trends by district, Eastern Province

Source: CSO/MAL 2001-2010
Importance of soya bean in relation with other crops

**Total production of crops**

- Maize
- Groundnuts
- Sunflower
- Soyabean

Source: CSO/MAL 2010

**Share of Crops Sold versus Retained for Home Consumption**

- Soyabean: 30%
- Groundnuts: 63%
- Sunflower: 73%
- Maize: 53%

Source: CSO/FSRP 2008

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Challenges of input supply and production

- Availability of commercially certified seed has been unreliable in recent years
  - Cash constrained public research institute
  - Planning period for how much seed to produce and deliver has up to a 2 year horizon
    - But smallholder demand is difficult to predict that far into the future

- Farmers prefer local seed
  - They are inexpensive, can be recycled
Popular soya bean seed used, 2011

Challenges of input supply and production cont.

- Seed contamination is also a major concern
  - Can occur at seed multiplication
  - Seed retail- other dealers go beyond contamination and counterfeit entire bags of seeds

- Farmers rarely use inoculum (an important input in soya production)
  - Lack of knowledge about the benefits
  - Problems of acquisition and storage-liquid inoculant
  - Problems of acquisition and rehydration-powder inoculant
Challenges cont.

- Poor agronomical management practices
  - Farmer do not harvest the entire area planted because yields on those fields are too low to justify the cost of harvesting
- Ultimately – low yields
Average soya bean yield over time, Eastern Province

Source: CSO/MAL 2001-2010
Soya bean marketing
Percentage of households selling soya bean by buyer type, Eastern Province

Challenges associated with soya bean marketing
1. Farmers turn their crop into cash when the prices are the lowest

Number of Households Selling Soybeans by Price Movement

Source: IAPRI/CSO/MAL 2012
Price Movement and Marketed Volume

Source: IAPRI/CSO/MAL 2012
2. Farmers tend to have small quantities to sell

Cumulative Percent of Households by Kilogram of Soybeans Sold

Source: IAPRI/CSO/MAL 2012
3. Lack of trust between farmers and traders

- There is a large amount of distrust between farmers and traders, and it flows in both directions
- Farmers complain of rigged scales
- Traders complain that sacks are frequently loaded with sand to increase their weights
  - Other than buyer’s discretion, there is no enforced grading system in place to dis-incentivize weighting bags
  - Honest farmer get the same price for a pure kilogram of soybean as a dishonest farmer
Recommendations

- Need to engage the seed producers, farmer organizations and agro-dealers on forecasting demand for both soya bean seed and inoculum
- There is need to promote awareness of smallholder rights under the Laws of Zambia Seed Act
- Farmers need to be aware on the benefits of using inoculum and how to apply
- Improve the extension service with regard to agronomic practices
- Private sector-led out grower schemes, increased investment in public research, development, and extension could significantly help to overcome these constraints
Recommendations

- To address the challenges associated with grain marketing, the following options may be considered
  - Regulation against weight and scale tampering needs to be enforced more often – spot checks
    - to infuse greater trust in the market
  - There is need to focus efforts on improving farmers’ capacity to engage with the already existing market
    - Through training on negotiation and market identification
  - Lastly, formation of oil seed association may help look into these challenges
Thank you for your attention

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“Analysis of the Soya Bean Value Chain in Zambia’s Eastern Province”