Investment opportunities and Challenges in the Groundnuts Sector in Eastern Province

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Chipata, 22.11.2013
About the Study

- The study was conducted five districts: Katete, Petauke, Chadiza, Chipata and Lundazi
- Interviews with key players: DACOs, DMDO, Traders, Processors, Seed companies, Research Institute (February-March 2012).
- Focus group Discussions with Farmers (400) in all the districts (May 2012)
- Other data sources: Rural Agricultural Livelihood Surveys (RALS12) and CFS
Presentations Outline

- Overview of the g/nut sector in Zambia and in Eastern province
- The g/nuts Value Chain: Investment Opportunities and Challenges
- Pathways for public and private sector participation
I. Overview of the g/nut sector in Zambia and in Eastern province

Declining % share of groundnuts in total area cultivated compared to maize and cotton

![Graph showing % share of crop within agricultural season](image)
Groundnuts production and yield trends

![Graph showing groundnuts production and yield trends from 2008/09 to 2012/13. Production (MT) and Yield (MT/ha) are plotted against years.]
- Low yields
## Common Varieties and yields

<table>
<thead>
<tr>
<th>Variety</th>
<th>Year Released</th>
<th>Days to Maturity</th>
<th>Seed Size</th>
<th>Oil Content (%)</th>
<th>Yield (MT/ha)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Makulu Red</td>
<td>1964</td>
<td>130-145</td>
<td>Medium</td>
<td>48-50</td>
<td>2.0-2.5</td>
</tr>
<tr>
<td>Champion</td>
<td>1998</td>
<td>130-140</td>
<td>Large</td>
<td>48-50</td>
<td>1.5-3.0</td>
</tr>
<tr>
<td>Chalimbana</td>
<td>1966</td>
<td>150-160</td>
<td>Large</td>
<td>48-50</td>
<td>0.5-1.0</td>
</tr>
<tr>
<td>MGV-2</td>
<td>1988</td>
<td>130-140</td>
<td>Medium</td>
<td>45-48</td>
<td>1.0-2.0</td>
</tr>
<tr>
<td>MGV-4</td>
<td>1992</td>
<td>120-130</td>
<td>Medium</td>
<td>48-50</td>
<td>1.5-3.0</td>
</tr>
<tr>
<td>MGV-5</td>
<td>2008</td>
<td>130-140</td>
<td>Large</td>
<td>45-48</td>
<td>1.5-4.0</td>
</tr>
<tr>
<td>Luena</td>
<td>1998</td>
<td>90-100</td>
<td>Small</td>
<td>48-50</td>
<td>1.0-2.0</td>
</tr>
<tr>
<td>Chishango</td>
<td>2007</td>
<td>130-140</td>
<td>Medium</td>
<td>48</td>
<td>1.5-4.0</td>
</tr>
<tr>
<td>Natal Common</td>
<td>1976</td>
<td>90-100</td>
<td>Small</td>
<td>45-48</td>
<td>0.5-1.0</td>
</tr>
<tr>
<td>Chipego</td>
<td>1995</td>
<td>100-110</td>
<td>Small</td>
<td>45-48</td>
<td>1.0-1.5</td>
</tr>
<tr>
<td>Comet</td>
<td>1970</td>
<td>90-100</td>
<td>Small</td>
<td>45-48</td>
<td>0.5-1.5</td>
</tr>
<tr>
<td>Katete</td>
<td>2008</td>
<td>90-100</td>
<td>Small</td>
<td>43</td>
<td>1.0-2.0</td>
</tr>
</tbody>
</table>
Declining area planted to groundnuts in all provinces
II. The groundnuts Value Chain
1. Research
Research focused on improving yield, seed size, days to maturity, oil content

Public Sector- ZARI.

- Goal: release at least one variety every 3 yrs
- Latest release MGV-5 in 2008
- 2011- Msekera multiplied 5Mt of MGV5
- Main challenges
  - Funding
  - Side selling during seed multiplication
  - Seed contamination
Private Sectors

- 2008 Seedco produced the (50mt) Orion Variety
- 2011 Zamseed through EPFC multiplied 150mt OPVs
- 2010 & 2011 Seedco multiplied 5 Mt

The Problem

- 222,981 ha require >17,000mt at 80cm spacing
- EP requires 5,000mt
- Poor markets for improved seed
  - Low returns to investment
The Aflatoxin problem: new research

- High levels of aflatoxin contamination caused by poor drying and storage methods of groundnuts.
- Groundnuts are highly prone to aflatoxin contamination.
- Aflatoxin effects: liver cancer (Hepato-Cellular Carcinoma (HCC)), physical and mental development—e.g. stunting in Children.
- Denies farmer’s access to international markets.
- EU requirement—max 10ppb (for processing) and 4 ppb for direct consumption.
- South Africa—requires max 5ppb.
- EP survey (Icrisat)—4 to 100ppb. Nyimba up to 4,980ppb.
2. Input Supply
- Seed Companies – Zamseed, Pannar, Seedco
- Companies with Inter-linked Transaction: CAMACO and EPFC

- Localized Large-Scale Agro-Input/Output Traders
  - Shifa and Mania in Chipata,
  - Aliboo in Lundazi,
  - Keson in Katete,
  - Shain in Chadiza.

- Stock both certified and uncertified seed
- Developed trust with farmers over time - credit
- Also buys from the farmers
3. Production
Main Challenges

- Poor yields - 0.45 ton/ha against 1.5 – 4.0
- Small areas cultivated
- Labor Intensive – weeding, harvesting, shelling
  - Manual - no or little mechanization.

- Low prices and unpredictable markets
## Are Groundnuts a Woman’s Crop?

<table>
<thead>
<tr>
<th>District</th>
<th>Who is mostly responsible for the groundnuts field?</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Female</td>
<td>Male</td>
</tr>
<tr>
<td></td>
<td>Count</td>
<td>%</td>
<td>Count</td>
</tr>
<tr>
<td>Chadiza</td>
<td>2,414</td>
<td>22.9</td>
<td>8,146</td>
</tr>
<tr>
<td>Chama</td>
<td>5,360</td>
<td>61.3</td>
<td>3,377</td>
</tr>
<tr>
<td>Chipata</td>
<td>21,448</td>
<td>43.1</td>
<td>28,331</td>
</tr>
<tr>
<td>Katete</td>
<td>7,060</td>
<td>32.8</td>
<td>14,460</td>
</tr>
<tr>
<td>Lundazi</td>
<td>5,230</td>
<td>18.9</td>
<td>22,434</td>
</tr>
<tr>
<td>Mambwe</td>
<td>2,327</td>
<td>42.5</td>
<td>3,147</td>
</tr>
<tr>
<td>Nyimba</td>
<td>5,360</td>
<td>55.4</td>
<td>4,307</td>
</tr>
<tr>
<td>Petauke</td>
<td>16,515</td>
<td>40.1</td>
<td>24,718</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>65,714</strong></td>
<td><strong>37.6</strong></td>
<td><strong>108,919</strong></td>
</tr>
</tbody>
</table>

Source: CSO/MAL 2011.
4. Trading
Key problem
- Low market participation among the producers - about 45% sell; 20% production is traded

Key players
- Localised Large-Scale Agro-input/output Traders
- Traders from Lusaka and Copperbelt
- Traders from Tanzania – Particularly in Lundazi
- Export Trading Group Zambia - for local and export market
- Companies with Inter-linked Transactions - COMACO, EPFC usually input recovery.
Where do the farmers mostly sell

Proportion of Households Selling Groundnuts by Type of Buyer, by District, 2010/11

<table>
<thead>
<tr>
<th></th>
<th>Private traders</th>
<th>Market</th>
<th>Other households</th>
<th>Cooperatives</th>
<th>Millers</th>
<th>NGO</th>
<th>Others</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chadiza</td>
<td>90.7</td>
<td>3.6</td>
<td>5.6</td>
<td>-</td>
<td>0.0</td>
<td>-</td>
<td>0.0</td>
</tr>
<tr>
<td>Chipata</td>
<td>80.8</td>
<td>4.2</td>
<td>13.8</td>
<td>-</td>
<td>0.4</td>
<td>-</td>
<td>0.8</td>
</tr>
<tr>
<td>Katete</td>
<td>69.5</td>
<td>8.7</td>
<td>21.8</td>
<td>-</td>
<td>0.0</td>
<td>-</td>
<td>0.0</td>
</tr>
<tr>
<td>Lundazi</td>
<td>80.6</td>
<td>5.2</td>
<td>8.7</td>
<td>-</td>
<td>0.0</td>
<td>-</td>
<td>5.4</td>
</tr>
</tbody>
</table>

Source: CSO/MAL 2011.
Pricing Challenges

- Lack of trust between the producers and the buyers
  - Producers’ complaints – low prices, unfair barter, irregular weighing machines
  - Buyers complaints - Inconsistent supply, side selling

- Timing of Sales can affect price (Can range from Kr1/kg to K6/kg in one season)

- Shelling of Groundnuts (Kr15/50kg between shelled and unshelled)

- Remoteness affects prices (on average Kr2/kg difference)
G/nuts Price movements overtime

Domestic average prices in nominal terms

World average prices in nominal terms
Storage of Groundnuts

6. Processing and Exports
Main processing
- Peanut powder (done at farm-level for home consumption)
- Peanut butter (at farm and factory i.e. Comaco – product)
- Oil pressing- done by very few HHs mainly for sell. Use the service of oilpressor owners
  - 5kg produces 75 ml of cooking oil - sold between K12 and K15. K0.50/5kg paid for processing
  - If sold raw, 5kg sold for K10 if price is K2000
Zambia’s exports volumes lower than potential

Comparison with Malawi and Mozambique

Source: SA offers huge market FAOSTAT various years, 1990-2010.
- Current Markets: Congo DR, Tanzania, Angola
- SA providing huge market for Malawi Gnuts
- Aflatoxin levels limiting Zambia’s Gnut exports
- Malawi case of mitigating aflatoxin
  - close coordination between farmer’s association (NASFAM) and research institutions (Icrisat)
  - production standards
  - Identify sources of contamination
Opportunities For Public And Private Sector Investment

- Development and supply of improved and certified seed – in partnership with already established channels ie EPFC and COMACO
- Development/distribution of labour-saving technologies – ADP – use of modified ploughs for harvesting, shellers, farmer training and credit schemes
- Group selling (bulking) – to access large markets, monitor standards
- FISP inclusion
- Formation of oil seeds and beans association
Aflatoxin mitigation –

- Extension services on harvesting, shelling and storage
- Establishing Gnuts standards,
- Aflatoxin testing equipment
- Peanut butter and oil processing
Thankyou for your attention

Full paper available at
http://fsg.afre.msu.edu/zambia/wp78.pdf
Or
www.iapri.org.zm