Benefits of Ag Diversification

- Poverty reduction
  - Increased productivity as there is less risk to crop failure
  - Prevents soil erosion
  - Enables crop rotations
  - Regular returns obtained from various enterprises
Policy Pronouncements on Ag Diversification

A diversified and export oriented agriculture is recognised as one of the key drivers of economic transformation.

7NDP - “emphasizes on diversification away from maize to other high value crops coupled with agro-processing as being essential to socio-economic development”.

SNAP – Promote diversification for agricultural production and utilization.

CAADP - “…increase sustainable crop production, productivity, and value addition for a diversified range of competitive crops apart from maize.” (MAL 2013).
Overview of Agricultural Diversification
### Trends in Crop Diversification - Simpson Index

<table>
<thead>
<tr>
<th>Region</th>
<th>2004</th>
<th>2008</th>
<th>2012</th>
<th>2015</th>
</tr>
</thead>
<tbody>
<tr>
<td>Central</td>
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<td>.33</td>
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<tr>
<td>Copperbelt</td>
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<tr>
<td>Muchinga</td>
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<td>-</td>
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<tr>
<td>Southern</td>
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<tr>
<td>Western</td>
<td>.40</td>
<td>.30</td>
<td>.38</td>
<td>.35</td>
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<tr>
<td>Zambia</td>
<td>.42</td>
<td>.35</td>
<td>.38</td>
<td>.37</td>
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</tbody>
</table>
Average number of crops grown per household

<table>
<thead>
<tr>
<th>Number of crops</th>
<th>Percent of households</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.00</td>
<td>18.2</td>
</tr>
<tr>
<td>2.00</td>
<td>31.7</td>
</tr>
<tr>
<td>3.00</td>
<td>29.3</td>
</tr>
</tbody>
</table>

The graph shows the distribution of the number of crops grown per household, with the majority of households growing 2-3 crops.
Eastern Average Number of crops grown per Household

- 10.4% of households grow 1 crop
- 32.5% grow 2 crops
- 37.3% grow 3 crops
- 15.2% grow 4 crops
- 3.9% grow 5 crops
- .7% grow 6 crops
- .0% grow 7 crops
- 0.0% grow 8 crops
- 0.0% grow 9 crops

Number of crops grown: 1, 2, 3, 4, 5, 6, 7, 8, 9
Percent of households: 10.4%, 32.5%, 37.3%, 15.2%, 3.9%, .7%, .0%, 0.0%, 0.0%
% of cultivated area devoted to various crops

- Maize: 53.6%
- All other Crops: 6.9%
- Gardens: 6.15%
- Orange Sweet Potato: 0.1%
- Sweet Potatoes: 2%
- Cowpeas: 0.3%
- Mixed Beans: 3.2%
- Seed cotton: 3.3%
- Soya Beans: 1.5%
- Cassava: 10.6%
- Groundnuts: 7.5%
- Millet: 2.1%
- Rice: 1.8%
- Sorghum: 1.1%

Indaba Agricultural Policy Research Institute
Proportion of cultivated area devoted to various crops by Province (2015)

Source: CSO/MAL 2015
Share of crops to total quantity produced

- Maize: 71%
- Wheat: 6%
- Pineapples: 0%
- Soybeans: 6%
- Groundnuts: 3%
- Sunflower: 3%
- Millet: 1%
- Sorghum: 0%
- Maize for seed: 2%
- Rice: 1%
- Seed cotton: 1%
- Irish potatoes: 1%
- Virginia Tobacco: 1%
- Mixed beans: 1%
- Sweet Potatoes: 3%
Concerns on Maize Centric Policies

Limit the potential to use agriculture as a poverty reduction tool

Deplete soil nutrients

Elevate risks, at both household and economy-wide level, associated with:

- Climate change – droughts/floods
- Price volatility
- Market risks

Limit the scope and scale of agro-processing, trading and input supply
Successes of e-voucher on diversification

E-voucher promotes diversification

There is evidence that e-voucher, properly implemented, can support diversification, whereas traditional FISP is a key maize centric policy that constrains diversification.

Evidence from the previous implementation

• Some farmers purchased other inputs apart from maize seed and fertilizer, e.g. Veterinary drugs, herbicides, etc.
Ag Diversification Opportunities
Crop/livestock suitability by agro-ecological zones

**Region IIb:**
- Rainfall range 800 – 1,000 mm/annum
- Loamy to sandy soils
- Cassava, sorghum, millet, sesame, cashew nuts, livestock, fisheries

**Region I:**
- Rainfall Less than 800mm/annum
- Loamy to clay soils
- Cotton, sorghum, millet, sesame, cashew nuts, livestock, fisheries

**Region IIa:**
- Rainfall range - 800 to 1,000mm/annum
- Inherent fertile plateau soils.
- Maize, cotton, tobacco, sunflower, soybeans, irrigated wheat, groundnuts, flowers, paprika, vegetables, cassava, millet, horticulture, livestock.

**Region III:**
- More than 1,000mm of rainfall/ annum
- Very deep soils, sandy clay loam.
- Cassava, millet, sorghum, beans, groundnuts, rice, coffee, tea, pineapples, fish farming, livestock.
Horticulture

Gross margins of cabbage, tomato and onion are much higher than that of maize:
- 219 times for cabbage
- 179 times for tomato
- 138 times for onions
Important research findings on horticulture

- Proper infrastructure Increases smallholder farmers participation in horticultural markets

- Chaotic market places disadvantage farmers and other market participants

- Price instability reduces the probability of participation in horticultural markets
Livestock Production Opportunities by Province

Source: Ministry of Fisheries and Livestock
Direct impacts of climate change on livestock

Source: CIAT; World Bank (2017)
Cattle demographic parameters

<table>
<thead>
<tr>
<th>Year</th>
<th>Population Growth Rate (%)</th>
<th>Mortality Rate (%)</th>
<th>Commercial Offtake Rate (%)</th>
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<tbody>
<tr>
<td>2001</td>
<td>-8.2</td>
<td>17.2</td>
<td>5.4</td>
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<tr>
<td>2004</td>
<td>-6.4</td>
<td>16.1</td>
<td>3.9</td>
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<tr>
<td>2008</td>
<td>-2.1</td>
<td>10.7</td>
<td>6.2</td>
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<tr>
<td>2012</td>
<td>0.9</td>
<td>13.0</td>
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<tr>
<td>2015</td>
<td>7.8</td>
<td>8.1</td>
<td>5.9</td>
</tr>
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</table>

Note: The diagram shows the trends of population growth rate, mortality rate, and commercial offtake rate over the years 2001 to 2015.
Goats demographic parameters

<table>
<thead>
<tr>
<th>Year</th>
<th>Population Growth Rate</th>
<th>Mortality Rate</th>
<th>Commercial Offtake Rate</th>
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<tbody>
<tr>
<td>2001</td>
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<td>2004</td>
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<td>2012</td>
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<tr>
<td>2015</td>
<td>-3.9</td>
<td>13.0</td>
<td>19.4</td>
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</table>
Pigs demographic parameters

<table>
<thead>
<tr>
<th>Year</th>
<th>Population Growth Rate</th>
<th>Mortality Rate</th>
<th>Commercial Offtake Rate</th>
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<tr>
<td>2015</td>
<td>-18.6</td>
<td>33.9</td>
<td>20.4</td>
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</table>
What is the way Forward for Improving Ag-Diversification in Eastern Province?