LIVESTOCK AND FISHERIES PRODUCTION IN ZAMBIA: OPPORTUNITIES & CHALLENGES

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Presented at the
Lusaka Provincial Outreach Meeting,
5th June, 2018
Presentation Outline

Overview of livestock sector in Zambia
Opportunities
Challenges
Policy Options
## Overview of Livestock Sector

<table>
<thead>
<tr>
<th>The sector is dominated by the smallholder farmers who account for 80% of the total livestock population</th>
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</thead>
<tbody>
<tr>
<td>It acts as a risk buffer by providing a means of reducing the risks associated with crop failure and a diversification strategy for resource-poor farmers</td>
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<tr>
<td>Contributes 3.2% to national GDP and over 30% to agric. GDP</td>
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<tr>
<td>Yet livestock budget share of the Poverty Reduction Program is remains very small</td>
</tr>
<tr>
<td>The sector is characterized by poor husbandry methods, limited disease control, and high mortality rates and low productivity coupled with a serious knowledge gap</td>
</tr>
</tbody>
</table>
What Opportunities Exist in the Livestock and Fisheries Sector?
1. Raising Incomes

![GDP per capita (constant 2005 US$) for Zambia and Sub-Saharan Africa (developing only) from 1990 to 2014.](image)
## 2. Changing Consumption Patterns

<table>
<thead>
<tr>
<th>Year</th>
<th>Beef</th>
<th>Poultry</th>
<th>Eggs</th>
<th>Aquatic products (Fish)</th>
<th>Other meat</th>
<th>Meat, milk, eggs &amp; fish</th>
</tr>
</thead>
<tbody>
<tr>
<td>1996</td>
<td>6.0</td>
<td>4.6</td>
<td>1.4</td>
<td>11.5</td>
<td></td>
<td>25</td>
</tr>
<tr>
<td>1998</td>
<td>3.3</td>
<td>4.6</td>
<td>1.4</td>
<td>9.7</td>
<td>4.5</td>
<td>26</td>
</tr>
<tr>
<td>2010</td>
<td>3.0</td>
<td>6.8</td>
<td>1.7</td>
<td>11.5</td>
<td>3.0</td>
<td>28</td>
</tr>
</tbody>
</table>
Livestock Revolution

- Population growth, urbanization, increasing incomes
- Increase demand for livestock/livestock products

Evidence - as people emerge from poverty, consumption patterns changes
- Consume more high protein foods - derived from Fish, livestock and livestock products.

Projections of Zambia’s total meat/milk demand from 2012 to 2027 show that
- (120 to 600) thousand tonnes of meat
- (260 - 1200) million litres of milk
Livestock Opportunities

Increased demand for livestock related products
- Increased income levels coupled with rapid urbanization
- Changes in consumption patterns

Increasing land constraints
- 64% of the rural farm households own less than 2 ha of land; opportunities for income generation from traditional field crops are limited and declining.
- Livestock rearing especially small ruminants and village chickens may be well suited for very small farms

Introduction of the electronic voucher
- Farmers can utilize this facility to procure livestock related inputs

Low input cost for small ruminants
- The ability of livestock such as goats and village chickens to utilize a broad range of feed resources and adapt to marginal conditions
Livestock Production Trend

![Livestock Production Trend Chart](chart.png)

- **Cattle**
- **Sheep**
- **Goats**
- **Pigs**


- 2010
- 2011
- 2012
- 2013
- 2014
- 2015
- 2016
- 2017
Opportunities for Smallholder Farmers

- Dairy Production
- Beef Production
- Poultry production
- Fish Production
Livestock and Fisheries Opportunities by Province

- Cattle Ranching, Small Ruminants, Fish Farming
- Cattle Ranching, Dairy, Poultry
- Cattle Ranching, Small Ruminants, Fish Farming
- Small Ruminants, Fish Farming
- Cattle Ranching, Small Ruminants, Dairy
- Cattle Ranching, Small Ruminants, Fish Farming, Dairy, Piggery, and Poultry
- Cattle Ranching, Small Ruminants, Fish Farming, Dairy
- Cattle Ranching, Small Ruminants, Fish Farming, Poultry
- Cattle Ranching, Small Ruminants, Piggery, Poultry
- Cattle Ranching, Small Ruminants, Fish Farming, Dairy

Source: Ministry of Fisheries and Livestock

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Opportunities in Fish Production

- At national level Zambia faces a huge deficit in meeting the growing demand for fish especially from urban consumers
- About 35% of national fish requirements is met through imports from various countries (Namibia accounting for 89%)
- Despite the huge quantities of fish that is imported, it has been reported that over 80% of that fish is informally re-exported to countries like Congo DR and Malawi
- The continued increase in fish imports and exports, shows that there is huge demand for fish both locally and to other neighboring countries
Fish Production in Zambia

Quantities of Fish Produced in tons

- **Capture Fishery**
- **Aquaculture**

Source: Department of Fisheries
Fish Exports and Imports

**Imports**

- Quantity of Fish Imported in tons
- 2007 to 2017

**Exports**

- Quantity of Fish Exported in tons
- 2007 to 2017
Aquaculture Production

- Zambia has conducive climatic condition for aquaculture production in most parts of the country
- Aquaculture is still in its infancy stage accounting for 27% of the total fish production in Zambia hence the need for increased efforts in fish farming
- Government continued promoting aquaculture through establishment of Aqua-parks in high potential zones
- The Zambia Aquaculture Enterprise Development Project is one avenue that small-scale fish farmers can utilize to access funds for fish farming
## Estimated Gross Margins

<table>
<thead>
<tr>
<th></th>
<th>Average Size Pond (544m²)</th>
<th>&lt;150 m²</th>
<th>150-500m²</th>
<th>500-700m²</th>
<th>700-1000m²</th>
</tr>
</thead>
<tbody>
<tr>
<td>Production Cycle (Months)</td>
<td>6</td>
<td>6</td>
<td>6</td>
<td>6</td>
<td>6</td>
</tr>
<tr>
<td>Variable Costs</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Average Fingerlings Stocked</td>
<td>2,348</td>
<td>1,144.00</td>
<td>2,094.00</td>
<td>3,066.00</td>
<td>4,006.00</td>
</tr>
<tr>
<td>Cost per Fingerlings</td>
<td>0.58</td>
<td>0.62</td>
<td>0.57</td>
<td>0.53</td>
<td>0.4</td>
</tr>
<tr>
<td>Cost of Fingerlings</td>
<td>1,361.84</td>
<td>709.28</td>
<td>1,193.58</td>
<td>1,624.98</td>
<td>1,602.40</td>
</tr>
<tr>
<td>Cost of Feed</td>
<td>1,521.00</td>
<td>1,258.63</td>
<td>1,670.00</td>
<td>1,843.00</td>
<td>2,000.00</td>
</tr>
<tr>
<td>Labour Cost</td>
<td>1,800.00</td>
<td>1,800.00</td>
<td>1,800.00</td>
<td>1,800.00</td>
<td>1,800.00</td>
</tr>
<tr>
<td>Cost of Manure</td>
<td>202</td>
<td>247.57</td>
<td>125.99</td>
<td>294.54</td>
<td>341.3</td>
</tr>
<tr>
<td>Transport Cost</td>
<td>185</td>
<td>158</td>
<td>181</td>
<td>202</td>
<td>204</td>
</tr>
<tr>
<td>Total Cost</td>
<td>5,069.84</td>
<td>4,173.48</td>
<td>4,970.57</td>
<td>5,764.52</td>
<td>5,947.70</td>
</tr>
<tr>
<td>Fish Sold in one Cycle (Kg)</td>
<td>981</td>
<td>637.2</td>
<td>587.83</td>
<td>1,207.29</td>
<td>1,226.28</td>
</tr>
<tr>
<td>Price per kg</td>
<td>22</td>
<td>20</td>
<td>22</td>
<td>23</td>
<td>22</td>
</tr>
<tr>
<td>Revenue</td>
<td>21,582.00</td>
<td>12,744.00</td>
<td>12,932.26</td>
<td>27,767.67</td>
<td>26,978.16</td>
</tr>
<tr>
<td>Gross Margins (GM)</td>
<td>16,512.16</td>
<td>8,570.52</td>
<td>7,961.69</td>
<td>22,003.15</td>
<td>21,030.46</td>
</tr>
<tr>
<td>Net Profit Margin (%)</td>
<td>77%</td>
<td>67%</td>
<td>62%</td>
<td>79%</td>
<td>78%</td>
</tr>
</tbody>
</table>
Challenges in Livestock Production

Extension Service Delivery

• An important aspect in the development of livestock production
• Provision for animal husbandry and animal health management
• Livestock extension service delivery remains limited when compared with the crop production sector.

Government gives priority to the crop sector as reflected in

• Low number of veterinary assistant and the large size of veterinary extension camps
• Low budget allocation to the livestock and fisheries sector

Prevalence of livestock Diseases

• Disease outbreak is one of the major issues that leads to under investments in the livestock production
• The type and severity of disease outbreak vary from district to district
Cont.’ Challenges in livestock Production

Challenge of animal health Service Delivery

• Limited number of veterinary personnel coupled with lack of transport at camp level hampers the delivery of health services
• Lack of livestock service centers in most rural areas makes it difficult to centrally conduct vaccinations
• Lack of cold storage facilities for vaccines
• Some farmers do not want to pay for the services

Other challenges

• Low market participation
• Small Herd Size
• Limited availability of high quality breeding stock
• Limited access to credit
Percentage of farmers selling livestock

- Cattle: 16.90%
- Goats: 33.60%
- Pigs: 32.10%
- Sheep: 35.50%
- Village Chickens: 36.10%
Livestock Marketing Channels and Distribution

- Village Chickens: Other households/individuals dominate, with small livestock traders and large private firms negligible.
- Sheep: Other households/individuals dominate, with small livestock traders and large private firms negligible.
- Pigs: Other households/individuals dominate, with small livestock traders and large private firms negligible.
- Goats: Other households/individuals dominate, with small livestock traders and large private firms negligible.
- Cattle: Other households/individuals dominate, with small livestock traders and large private firms negligible.
Factors Influencing Market Participation

- Livestock sells among the smallholder farmers is largely through the informal channels.
- The livestock marketing behaviour of smallholder livestock farmers is driven more by income needs rather than demand or price movements.
- Livestock herd sizes have a big influence on whether the farmers will participate in livestock marketing or not.
- Small livestock herd size tends to limit livestock commercialization among the smallholder.
- The cultural and economic motives for rearing livestock among smallholder farmers tend to shape how these farmers respond to livestock markets.
### Disease Incidences among smallholder livestock farmers

<table>
<thead>
<tr>
<th></th>
<th>Cattle</th>
<th>Goats</th>
<th>Pigs</th>
<th>Sheep</th>
<th>Village Chicken</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>2012</strong></td>
<td>62.70%</td>
<td>31.30%</td>
<td>39.50%</td>
<td>42.20%</td>
<td>61.50%</td>
</tr>
<tr>
<td><strong>2015</strong></td>
<td>44%</td>
<td>22%</td>
<td>32%</td>
<td>24%</td>
<td>48%</td>
</tr>
</tbody>
</table>

**Percentage of Households**
## Livestock Disease Prevention and Control Mechanisms

<table>
<thead>
<tr>
<th></th>
<th>Cattle</th>
<th>Goats</th>
<th>Pigs</th>
<th>Sheep</th>
<th>Village Chicken</th>
</tr>
</thead>
<tbody>
<tr>
<td>Veterinary drugs</td>
<td>94%</td>
<td>45%</td>
<td>23%</td>
<td>76%</td>
<td>22%</td>
</tr>
<tr>
<td>Traditional Medicines</td>
<td>1%</td>
<td>5%</td>
<td>5%</td>
<td>6%</td>
<td>24%</td>
</tr>
<tr>
<td>Not Treated</td>
<td>5%</td>
<td>50%</td>
<td>72%</td>
<td>18%</td>
<td>54%</td>
</tr>
</tbody>
</table>
Challenges in Fisheries

- High cost of quality fingerlings
- Lack of fish storage facilities
- Low production and productivity
- Limited access to Credit and Finance
- Inadequate number of breeding centers for fingerlings
- High financing and feed costs
Challenges

A. 2016 Agriculture Budget

- ZMW 708,533,323 (23%)
- ZMW 2,382,266,379 (77%)

- Crops
- Fisheries and Livestock

B. 2017 Agriculture Budget

- ZMW 903,800,000 (15%)
- ZMW 5,048,000,000 (85%)

- Crops
- Fisheries and Livestock

Source: MoA (2017)
What are the Policy Options?
Reduce Livestock Mortality and Disease Prevalence

Reduce incidences of diseases
- Sensitization of farmers on diseases of national importance and management diseases
- Livestock vaccination campaign
- Encourage farmers to use flexible electronic input voucher

Strengthen the extension service delivery
- Reducing vet assistant - farmer ratio
- Increasing participation of other key stakeholders such as NGOs, private org
- Promote community participation

Increase Access to Livestock Services
- Construction of new and rehabilitation of existing community dip tanks
- Training /deploy more veterinary assistants
- Establish and operationalize livestock service centers through PPP

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Increase Production and Market Participation

Effective breeding programs
- Rehabilitate the existing breeding centers to fully operational
- Promoting cross breeding to enhance the fertility rate and improve productivity

Restocking program
- Undertake restocking of livestock in areas where these were wiped out by diseases

Promote market Participation
- Formation of livestock marketing groups
Final Remarks

The current agriculture policy plan highlights a number of issues that need to be done to improve the livestock production and productivity

- What seems to be problematic is the implementation and enforcement of the issues addressed

Ultimately successful implementation of the suggested policy will require

- Increasing the budget allocation/actual release to livestock sector
- Sustained funding from both public and private sector
- Timely release of funds
THANK YOU