Using the Livestock Master Plan (LMP) process to influence pro-poor livestock development in Ethiopia and Tanzania

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(ILRI)

Launch of Tanzania Livestock Master Plan, Dar es Salaam, Tanzania, 23 February 2016
Livestock Master Plans (LMP): Motivation

• Under-investment in the livestock sector is a major constraint to the livestock sector contributing to national development goals
• Ag Ministers lack ammunition (returns on investment) to get financial resources for livestock development (from Ministries of Finance)
• Lack of human capacity for quantitative livestock sector planning is also common
• Effective livestock development requires sector analysis to understand the current situation, to set long-term strategy and make action plans
• African governments need realistic action plans (LMPs) for meeting targets in national economic development plans
• Bill & Melinda Gates Foundation agreed to support capacity building for fact-based, realistic financial planning
Ethiopia Livestock Master Plan (LMP): Origin, Purpose, and Future

• The Ethiopia Ministry of Agriculture requested BMGF to fund capacity building of MOA staff to do fact-based livestock development planning
• The MOA asked for ILRI to provide training and backstopping
• The LMP has become the livestock development action plan under the new 5-year Ethiopia Growth and Transformation Plan
• The Gov’t of Ethiopian and donors (BMGF and World Bank so far) are now funding implementation of the LMP
• BMGF has now funded ILRI to help the Tanzania MALF do a LMP
• Discussions are on-going to do LMPs in Uganda, Kenya, Rwanda, and India
• Creating LMPs in developing countries is a way to influence pro-poor livestock development
Stakeholder Process of Developing a Livestock Sector Analysis (LSA) & Livestock Master Plan (LMP)

- Creating a LMP required “quantitative sector” analysis (LSA) but “stakeholder” involvement is essential
- Dynamic herd and sector models are built to do the 15 year livestock sector analysis (LSA) – baseline, projections and foresight analysis
- The LMP process is quantitative, but consultative. Over 50 specialists in Ethiopia provided data and parameters on animal productivity, value chains and cross-cutting issues
- Stakeholders helped create a national data base and model baselines, and helped identify potential interventions
- The Technical Advisory Committee guided the process, made technical input interventions and helped ensure the results are useful – realistic and relevant
How was the LSA and LMP interventions chosen? with indicators of GOE goals for GTP II

Using the livestock sector model built on a herd model, potential LMP intervention impacts were assessed against Ethiopian national development objectives for GTP II -- measured by livestock development indicators.

The national GTP objectives (indicator in parentheses) are the following:

- Reducing poverty (household income)
- Achieving food security (production-consumption balance)
- Contributing to economic growth (GDP or national income)
- Contributing to exports (foreign exchange earnings)
- Contributing to climatic sustainability (GHG emissions)

The LSA and LMP have demonstrated the potential of the livestock sector to reach national development goals
MOA livestock production zones and sub-zones in Ethiopia

Livestock Production System

Lowland Grazing (LG-L)
- LGAP
  - Small
    - C
    - S
    - G
    - Cam
    - P
    - Be

- LGP
  - Small
    - C
    - S
    - G
    - Cam
    - P
    - Be

Highland Mixed (MR-H)
- HMR-MD
  - Medium
    - C
    - S
    - G
    - Cam
    - P
    - Be

- HMR-MS
  - Medium
    - C
    - S
    - G
    - Cam
    - P
    - Be

Specialized (SP)
- Small
  - C-F
  - D
  - S-F
  - Be
  - Br
  - L

- Medium
  - C-F
  - D
  - Br
  - L

C: Cattle
Cam: Camel
S: Sheep
S-F: Sheep fattening
Be: Bees
G: Goats
EQ: Equines
D: Dairy
C-F: Cattle fattening
P: Backyard Poultry
L: Layers
Br: Broilers
### Production and productivity parameters of cattle by production zone

<table>
<thead>
<tr>
<th></th>
<th>Lowland Grazing (LG)</th>
<th>Mixed Rainfall Deficient Sufficient (MRD)</th>
<th>Mixed Rainfall Sufficient (MRS) Lowland Grazing (LG)</th>
<th>Dairy Specialized</th>
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<tbody>
<tr>
<td></td>
<td>AP</td>
<td>PS</td>
<td>PM</td>
<td>S</td>
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<tr>
<td>Herd size</td>
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<td>7</td>
<td>18</td>
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<td>Parturition rate (%)</td>
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<td>12</td>
<td>10</td>
<td>11</td>
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<tr>
<td>Mortality rate female calves (%)</td>
<td>6</td>
<td>7</td>
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<td>7</td>
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<tr>
<td>Mortality rate female sub adults (%)</td>
<td>4</td>
<td>5</td>
<td>5</td>
<td>5</td>
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<tr>
<td>Mortality rate Female adult (%)</td>
<td>15</td>
<td>16</td>
<td>16</td>
<td>12</td>
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<tr>
<td>Mortality rate male calves (%)</td>
<td>9</td>
<td>12</td>
<td>12</td>
<td>8</td>
</tr>
<tr>
<td>Mortality rate male sub adults (%)</td>
<td>7</td>
<td>9</td>
<td>9</td>
<td>5</td>
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<tr>
<td>Mortality rate male adults (%)</td>
<td>11.5</td>
<td>10.9</td>
<td>11.9</td>
<td>11.9</td>
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<tr>
<td>Herd size</td>
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<td>0.2</td>
<td>1.5</td>
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</table>
A. Dairy -- improved with AI and Synchronization, feed, and health

1. Improved Family Dairy systems & value chains in wet highlands and dairy belts (including peri-urban)

2. Specialized Commercial Dairy production & value chains

B. Red meat (and milk) systems improved with health and feed

1. Improved Family Red Meat-Milk systems in all production zones (cattle, sheep, goats and camels)

2. Specialized Beef Cattle Feedlots and On-farm Fattening

C. Poultry improved with crossbreeding & exotics, health and feed

1. Improved Family Poultry in all production zones

2. Specialized Industrial Poultry – Broilers and Layers
Smallholder Family and Specialized Commercial Systems are both Winners in Ethiopia: Returns on Investment 2013-2028

**Panel A: Improved Family Dairy**

- Small: 33
- Medium: 24

**Panel B: Specialized Dairy**

- Small: 29
- Medium: 43
Most animal systems can reduce poverty during GTP II

Annual incremental income per farm (ET Birr)

<table>
<thead>
<tr>
<th>Animal System</th>
<th>Annual Incremental Income (ET Birr)</th>
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<tbody>
<tr>
<td>Family Cattle (8)</td>
<td>4,000</td>
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<tr>
<td>Family Sheep (16)</td>
<td>1,000</td>
</tr>
<tr>
<td>Family Goat (25)</td>
<td>2,500</td>
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<tr>
<td>Family Camel (15)</td>
<td>5,000</td>
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<tr>
<td>Crossbred Cattle in MRS (10)</td>
<td>7,500</td>
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<tr>
<td>Improved Family Poultry (25)</td>
<td>3,000</td>
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Positive production-consumption balances projected for GTP II (2015-2020) for red meat, chicken meat, and all meat (thousand tons), with LMP interventions

Source: Based on LSA results.
Positive projected production-consumption balances for cow milk and all milk (million liters), (2015-2020) with LMP interventions.

Panel A: Cow Milk
- Consumption
- Production

Panel B: All Milk
- Production
- Consumption

Source: Based on LSA results.
GDP contribution from LMP interventions for milk, red meat, and chicken meat and eggs (2020)

- Red meat (ETB million): 74,064
- All milk (ETB million): 82,489
- Egg (ETB million): 10,054
- Chicken meat (ETB million): 5,577
GHG (CO$_2$e) emissions from BAU (without intervention) and with interventions with LMP and CRGE offtake rates (in Mt ton)
Percentage increase in **Red Meat** production and CO$_2$e emissions from interventions with “business as usual” (BAU or LMP) and CRGE offtake rates (%)

![Bar graph showing percentage increase in Red Meat production and CO$_2$e emissions.](image)
Livestock development efforts for GTP II need to:

• Invest in all LMP interventions to eliminate poverty in 18% of livestock keeping households (>11 million people)

• Focus on poultry development to achieve better food security, enable red meat exports, and lower GHG emissions

• Combination of cattle and poultry to improve food security – lower domestic meat prices to increase exports and foreign exchange earnings

• Focus on dairy development to achieve dairy product food security in domestic markets and also increase export earnings
Comparison of Public and Private investment shares by Major Value Chain (ETB Millions)
Minister of Ag Reaction to LMP

- The Agriculture Minister said “GOE will adopt and implement the LMP” thru the GTP II (5-year development plan)
- Livestock State Ministry now owns the LSA, GTP II and LMP
- Livestock State Ministry used the LMP to set targets for the GTP II (2015-2020) and it is the livestock sector implementation plan for the GTP II
- Ministry of Livestock & Fisheries now created and the Livestock Sectors are based on the commodity value chains recommended in the LMP for investment
- MLF is setting up its own policy & planning unit and is committed to expand the use of the LSA/LMP tools in planning, policy analysis and research
The Core LMP Team – MALF, ILRI staff (& BMGF)

THANK YOU!