

## Modeling livestock system dynamics and economywide policy impacts in Ethiopia

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### Objectives

- 1) Develop a systems-based analytical model that integrates the livestock system within the larger economy.
- 2) Use the model to assess future development scenarios for Ethiopia's livestock system.
- 3) Use the model to evaluate economy-wide impact of policies to enhance Ethiopia's cattle-dairy system.

# Development scenarios & livestock

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## Introduction

- GoE LMP assumes high demand growth;
- But income growth slowed down due to exogenous factors;
- LMP should incorporate a risk-based approach when evaluating prospects of the livestock sector.

## Methods

1. Herd dynamics model fully linked to an economywide CGE model;
2. Integrated model used to examine different economic growth scenarios;
3. See model framework (Figure 1)

## Results

- Income growth main driver of overall livestock system expansion;
- Urbanization shifts demand patterns towards more processed ASFs ;
- LMP may have overestimated growth & hence resource needs.

## Recommendations

- Need to strengthen ASF processing given more rapid urbanization;
- Integrating economywide & livestock models strengthen basis for livestock planning & can position livestock against competing investment needs.

Economic-demographic changes affect demand for animal source foods.

Livestock development plans should reflect economic reality and risks.

Livestock planners should integrate economywide and livestock systems models.

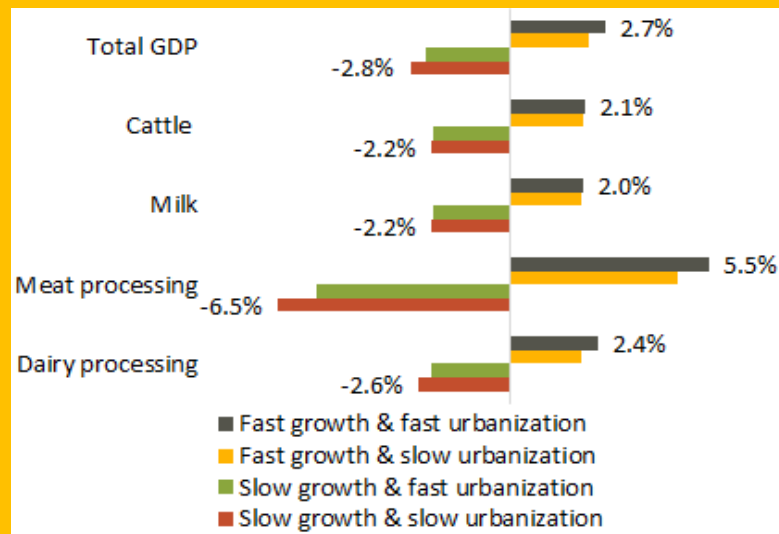


Figure 2: P-points deviation in output from baseline growth

Figure 1: The integrated model framework

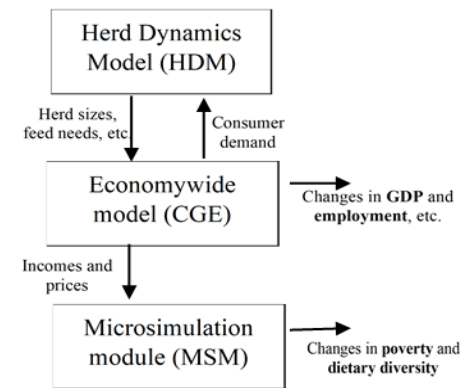
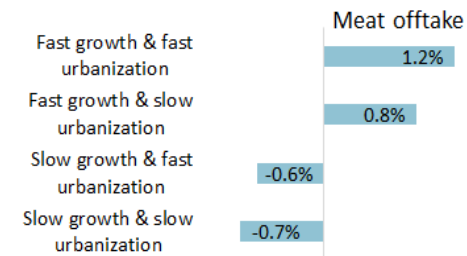


Fig. 3: P-point deviation from baseline change in meat offtake



## Research gaps or future opportunities

- Need to include other livestock types
- Improve how livestock sector interventions (health) are modelled.