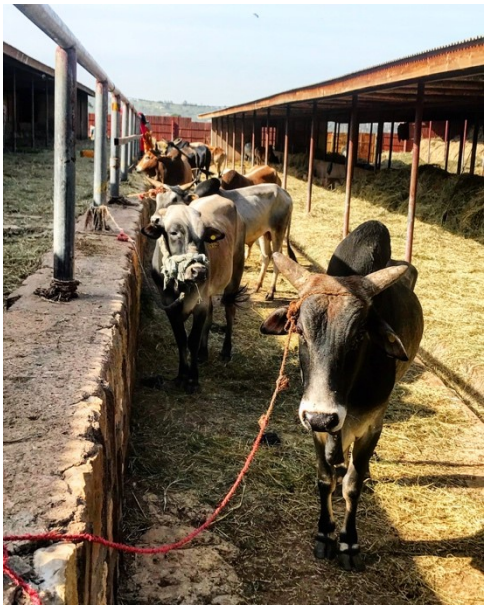
FEED THE FUTURE
The U.S. Government's Global Hunger & Food Security Initiative

Feed the Future Innovation Lab for Livestock Systems

Linking Cattle Nutrition to Human Nutrition:
A Value Chain Approach to Improving the Production, Handling, and Consumption of Animal Source Foods in Ethiopia



Evidence suggests that healthy livestock (such as cattle) contribute to healthier small-holder farming households by increasing productivity and providing highly nutritional foods for human diets, decreasing illness and reducing the cyclical burden of zoonotic and foodborne illness, and creating greater opportunities for households to meet their economic needs. Based upon this concept, Kansas State University, in partnership with Hawassa Univeristy, Haramaya University, Texas Tech University and the Ethiopian Institute of Agriculture Research, has developed an overall research objective: ***To create a systems-based research approach that strengthens linkages between improved animal source food production and consumption practices and human nutrition outcomes in Ethiopia.*** The goal of the project is to identify, in a qualitative and quantitative manner, the pathways between agriculture interventions and nutritional outcomes.

The expected outputs from this research include: 1) development of a sustainable research nexus between Ethiopian and U.S. researchers, 2) scientific publications and extension communications for each research domain, 3) the creation of effective training and outreach programs, 4) development of extension videos, and 5) development of opportunities for youth through internship programs.

The expected outcomes from this research includes: 1) identifying and bridging of knowledge gaps, 2) uptake of proposed technologies and practices, 3) new training and education opportunities for youth and women, particularly focusing on nutrition, and 4) train-the-trainer programs that integrate each domain.

Project Domains, Researchable Questions, and Objectives

1. Forage Domain: What strategies strengthen adoption, availability, and productivity of forage systems?

   Objective: Assess forage sorghum intercropping with annual and perennial forage crops for sustainable cattle forage production.

2. Ruminant Nutrition Domain: What are the impacts of better cattle nutrition on meat and milk production and quality?

   Objectives: (1) Assess strategies for improved protein nutrition of lactating cows differing in genetic capacity for milk production; (2) Evaluate impacts of improved dry season feeding strategies

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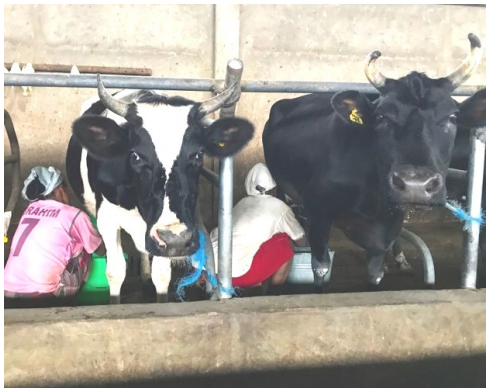
3. Meat Science Domain: To what degree does consumer preference and product quality enhance or inhibit meat product marketability, on a domestic and export market?

   Objective: Assess the quality of beef currently produced for export markets, and investigate the impact of alternative production systems on beef quality.



4. Dairy Science Domain: What are the appropriate interventions to addressing milk and dairy product handling and storage on the dairy production systems?

   Objective: Assess key bottlenecks for dairy product marketing and consumption in Ethiopia, including identifying, ranking of importance and determining the willingness to pay for newly developed dairy products.

5. Food Safety Domain: What is the food safety risk associated with increased consumption of animal-source foods (meat and milk)?

   Objectives: (1) Create foodborne pathogen baselines within municipal abattoirs; (2) Implement strategies to mitigate the burden of foodborne pathogens within abattoirs.

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6. Human Nutrition

   Objectives: (1) Determine the current dietary behaviors related to the consumption of animal products at the household level; (2) Identify the cultural, environmental, and economic barriers, if any, to the adequate consumption of animal products, and determine appropriate human nutrition interventions to overcome barriers.

7. Gender

   Objectives: (1) Develop gender sensitive interventions and treatments to address identified gender needs for each domain; (2) Integrate gender sensitivity into extension and outreach programs.

Quick Facts:

- **Duration:** 10/17/2016-09/30/2020
- **Target Stakeholders:** Cattle value-chain stakeholders: rural farmers, beef and dairy producers, diary cooperatives, butchers, and abattoirs.
- **Target Regions:** State of Southern Nations, Nationalities and Peoples (SNNP), Amahara, and Oromia