Problem
Malawi is food insecure due, in part, to poor infrastructure causing limited access to market places. This leads to subsistence farming, high levels of food waste, and low farmer profits.

Background
Of the 4 types of supply chains in Malawi, local co-ops and Ace are the long-term solutions.

Objective
Maximize smallholder farmer profit by evaluating uncertain revenue and cost variables associated with Malawi’s markets and logistics infrastructure.

Model
The flexible linear model estimates how changes in infrastructure, warehouse location, and market prices affect farmers’ decisions to sell at particular markets.

Insights
- Cost savings due to economies of scale from local co-op participation
- Importance of accurate, real-time price information from Ace communication program
- Transportation challenges
  - Road quality
  - Optimal warehouse location
- Warehousing benefits
  - Reduces food waste
  - Stabilizes prices
  - Enables access to credit

Flexibility in input variables enables further development and field testing.

Discussion
Transition from subsistence farming leads to specialization. Partnering with private business ensures sustainable projects. Supply chain challenges account for 95% of food waste.

“Move from a hand out, to a hand up, and finally a hand shake.” – Land O’Lakes International Development