Climate-Resilient Crops for Planetary Health: Strengthening Cowpea, Sesame, and Sorghum Value Chains for Food Systems Transformation and Land Health Restoration in Malawi

Authors: Dorica Singini

Lilongwe University of Agriculture and Natural Resources(LUANAR), MALAWI and World Food Programme(WFP), MALAWI

Introduction

- Global land system changes—driven by unsustainable agriculture, deforestation, and climate variability—are breaching ecological boundaries and threatening planetary health.
- In Sub-Saharan Africa, over 65% of productive land is degraded, undermining food security and rural livelihoods.
- Southern Africa, including Malawi, faces increasing climate extremes, with smallholder farmers highly vulnerable due to reliance on rain-fed agriculture.
- These challenges call for transformative approaches in land use, agriculture, and food systems to build resilience and sustainability.
- This study explores value chain opportunities for cowpeas, sesame, and sorghum—climate-resilient crops with potential to restore degraded land and improve livelihoods.

Objective

- To analyze the cowpea, sesame, and sorghum value chains in Malawi using a global market systems approach, with the aim of identifying productivity bottlenecks, market inefficiencies, and opportunities for strengthening seed systems, promoting structured markets, and scaling sustainable land practices to enhance smallholder resilience and inform policy planning.

Methodology

RESEARCH DESIGN

A mixed-methods design was used, combining:

Farm Household Surveys
Targeted producers in three selected value chains.

Key Informant Interviews
Conducted with actors across all value chain nodes:
- Input suppliers
- Processors
- Transporters
- Agro-dealers
- Wholesalers
- Exporters
- Policy makers (national & district)

Focus Group Discussions
Held with farmer groups engaged in the selected value chains.

Hed with farmer groups engaged in the selected value chains.

PHASE 1 PREPARATION
Desk Review
Stakeholder Sensitization
Stakeholder Mapping
PHASE 2 DATA COLLECTION & PROCESSING
Fieldwork

Sample: **1,447** households, **64** traders, **36** focus group discussions, **8** districts, Countrywide

Study Area

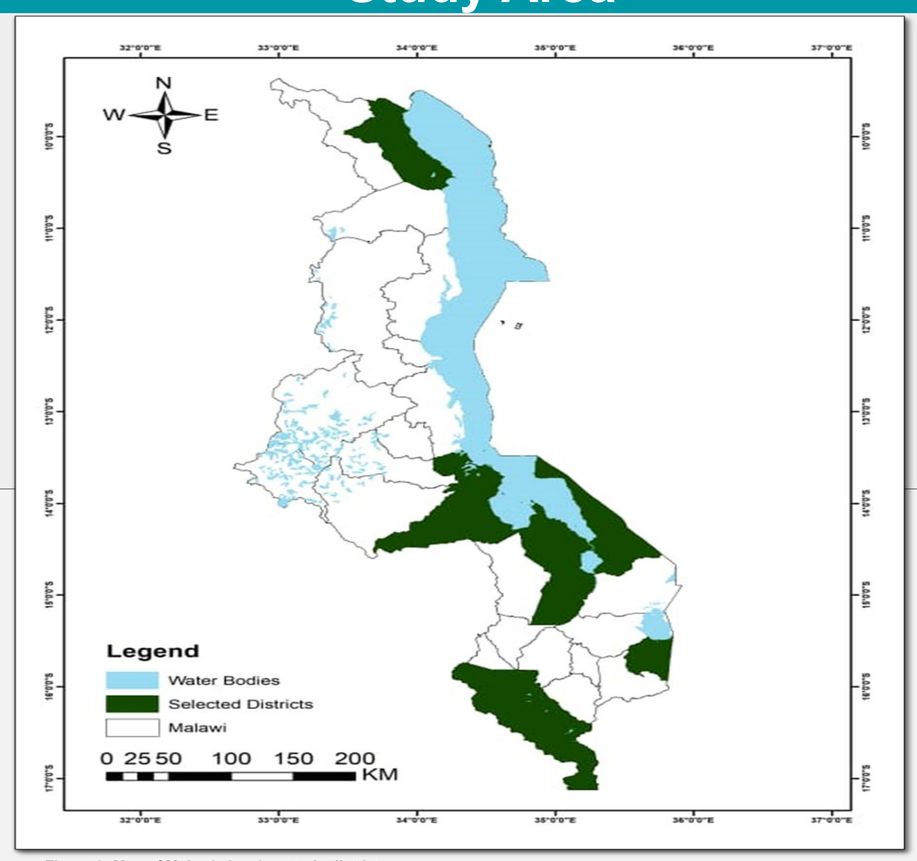

Figure 2: Map of Malawi showing study districts

Results

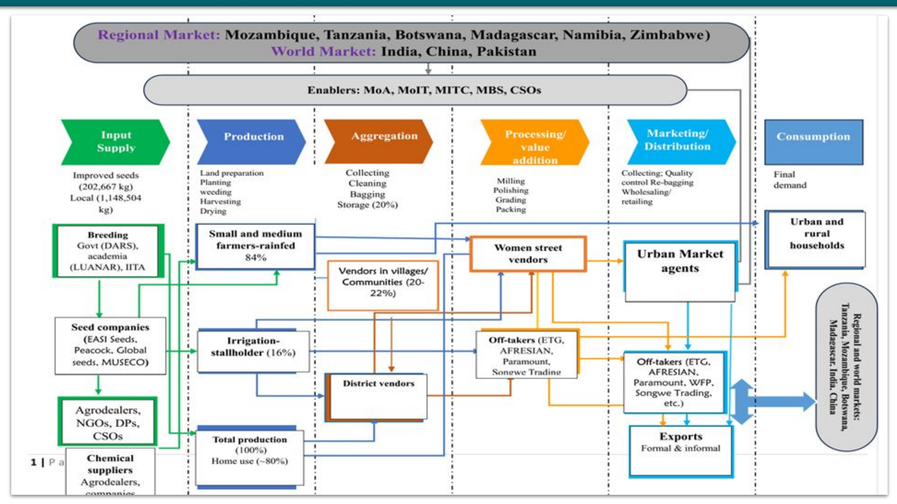

Figure 3: Mapping stages, and actors of Cowpea Value Chains in Malawi

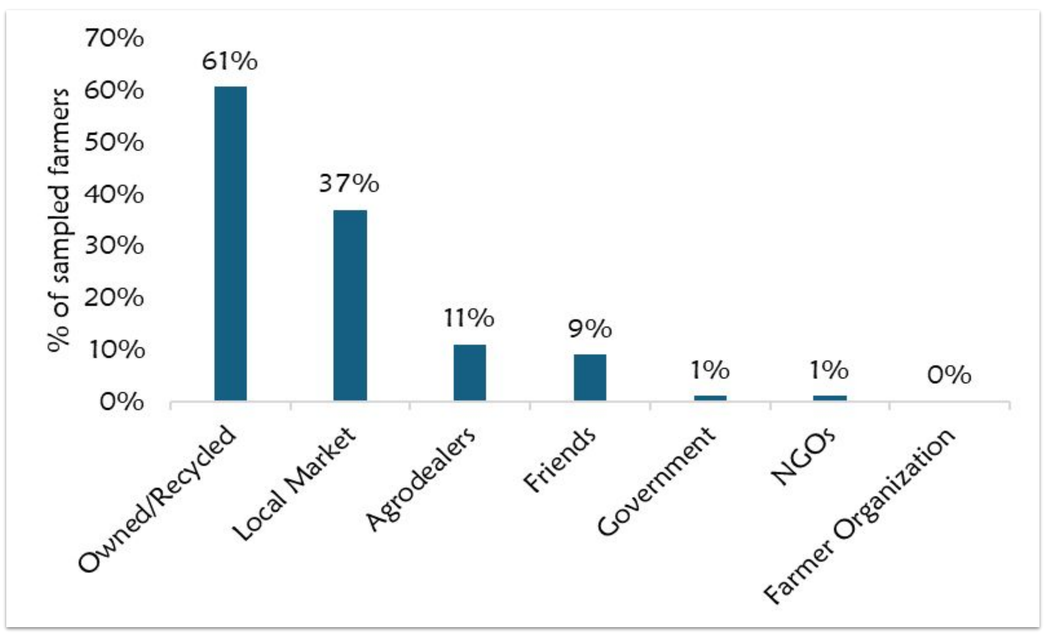

Figure 4: Main Seed sources for farmers in Malawi

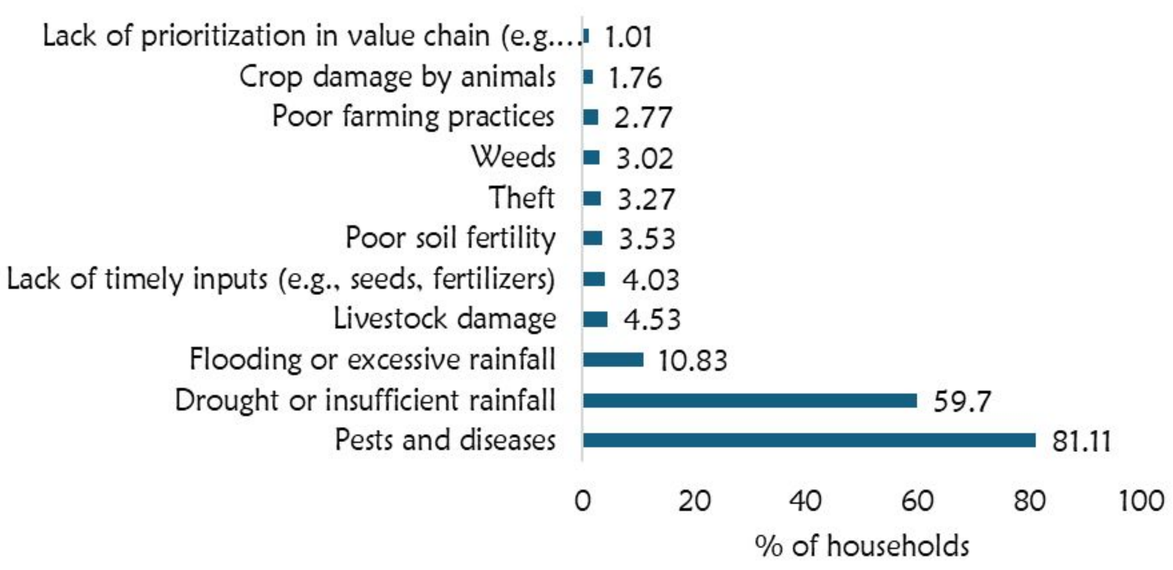

Figure 5: Sources of pre-harvest losses (percentage of sampled households)

Results Cont'

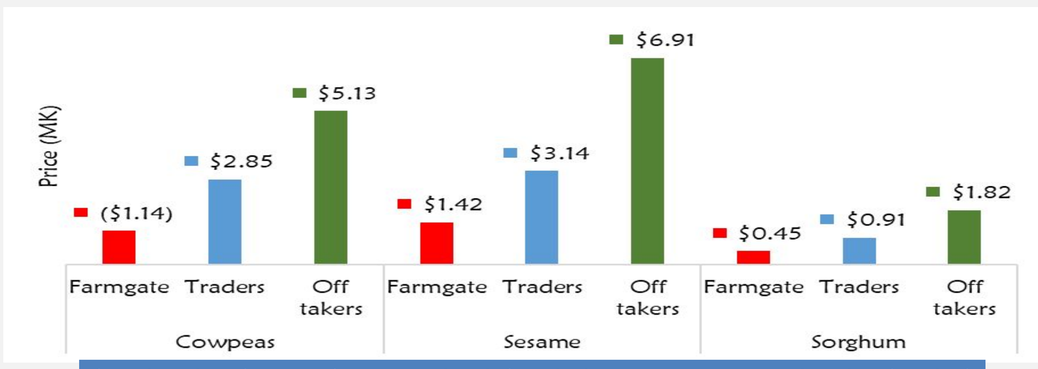

Figure 6: Market Price Dynamics Across Value Chain Nodes for Cowpeas, Sesame, and Sorghum in Malawi

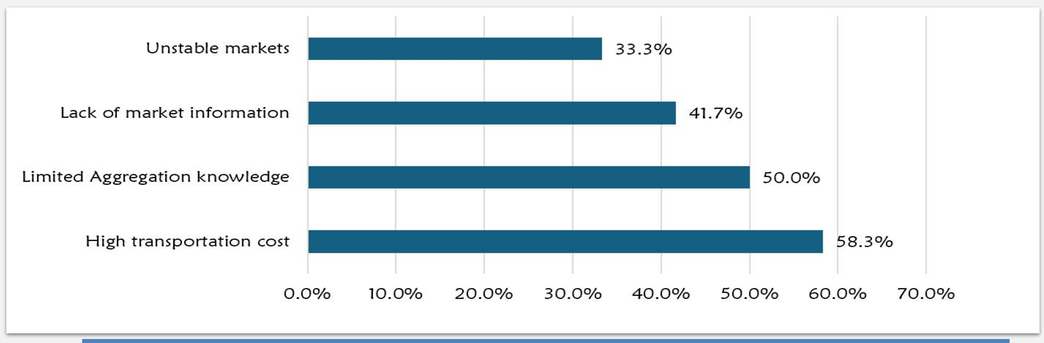

Figure 7: Reasons for less aggregation by farmers

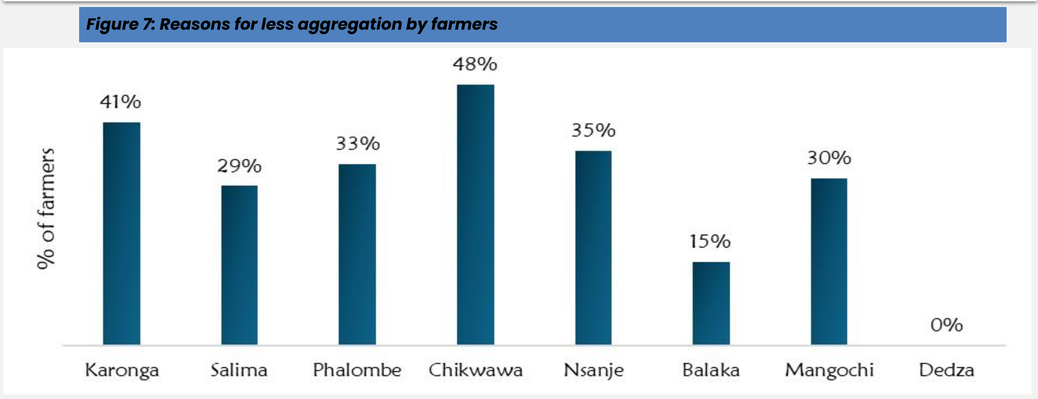

Figure 7: Farmers reporting membership to Farmer Organizations (FO)

Conclusion & Policy Recommendations

- Strengthening seed systems, structured markets, and sustainable land practices is key to unlocking the potential of cowpeas, sesame, and sorghum.
- Malawi's weak seed system and market inefficiencies limit productivity and farmer profitability.
- Mixed-methods research across 8 districts identified key bottlenecks and opportunities for value chain growth.
- Sesame showed the highest gross margins; traders earn significantly more than producers across all chains.
- Policy actions should include crop-specific strategies, stakeholder coordination, and integrating land restoration into national food systems planning.

Acknowledgements

Scan to Contact