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October, 2025

African Climate and Environment Center
Future African Savannas

POLICY BRIEF

CLI and TCFS farms in Kumbungu District — Credit: Author (March 2025).

FINANCING RESILIENCE IN KUMBUNGU: CROP–LIVESTOCK INTEGRATION (CLI) VS TRADITIONAL CROPPING (TCFS)

Smallholders in Northern Ghana face declining soil fertility and increasing climate shocks. Many rely on Traditional Cropping and Farming Systems (TCFS), which depend on soil fertility, which is declining, and give low returns. Crop-Livestock Integration (CLI) combines crops with livestock. Farmers use manure to enrich soils and feed crop residues to animals, creating simple nutrient recycling that boosts yields and resilience. This brief compares CLI and TCFS in Kumbungu District and highlights practical options to scale integrated farming.

Extension officer facilitating CLI training in Kumbungu District — Credit: Author, 2025.

OVERVIEW

Kumbungu District lies in the Guinea Savannah, where rain-fed farming is highly vulnerable to climate shocks. A survey of 380 households shows that CLI farmers recycle manure, diversify their incomes, and achieve higher profitability, while TCFS farmers depend on soil fertility which is declining. Despite its benefits, CLI adoption is constrained by labor demands, limited knowledge, and poor access to finance.

Study area: Kumbungu District, Northern Ghana — Credit: Author (QGIS, 2025).

POLICY RECOMMENDATIONS

1. Strengthen CLI-focused extension
2. Support inclusive adoption
3. Embed CLI in national frameworks

1. Deliver hands-on training in composting, manure use, simple livestock housing, and dry-season fodder management through agricultural extension officers.

2. Provide starter packs for women and youth, complemented with Village Savings and Loan Associations (VSLAs) and tailored micro-insurance to reduce financial risk.

3. Include CLI in district and national agricultural planning by setting clear targets that support adoption and monitor the results.

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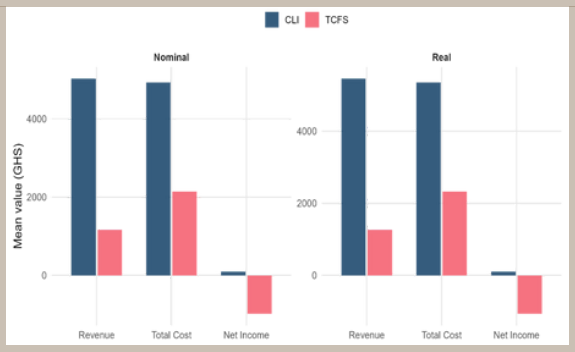
KEY FINDINGS



Average farm income under Crop–Livestock Integration (CLI) and Traditional Cropping and Farming Systems (TCFS) in Kumbungu District — Credit: Author, 2025.

The survey shows clear differences between CLI and traditional cropping in Kumbungu District.

CLI households earn more overall (see figure) and show stronger productivity due to better soil management and nutrient recycling.

Combining crops with livestock helps farmers cope with climate shocks and stabilize their incomes.

Adoption is more common among farmers receiving extension support, while high labor needs, limited knowledge, and poor access to credit and land, especially for women and youth, remain key barriers.

RESEARCH APPROACH

This policy brief is based on a household survey of 480 farmers in Kumbungu District. Of these, 380 households (190 practicing CLI and 190 using traditional cropping) were analysed. The study compared farm incomes, productivity, and the factors that influence farmers' decisions to adopt different farming systems. All financial figures were updated to reflect December 2024 prices.

CONCLUSION

Crop–Livestock Integration (CLI) shows clear advantages over Traditional Cropping Cropping and Farming Systems (TCFS) in Kumbungu District. CLI households achieved positive net incomes, stronger productivity, and higher efficiency, while TCFS farmers recorded financial losses and greater climate vulnerability. This demonstrates CLI's potential as a pathway to resilient and sustainable farming in the Guinea Savannah.

Yet, adoption remains constrained by labor demands, start-up costs, knowledge gaps, and limited access to credit and land, especially for women and youth. Expanding farmer-centered extension, supporting inclusive finance, and integrating CLI into Ghana's agricultural policies will be key to scaling its benefits for both farmers and national adaptation goals.

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