



Potential options to sustainably intensify mixed crop-ruminant systems in northern Ghana



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Introduction

Mixed crop-ruminant (MCR) farming predominates in Northern Ghana (Fig. 1), serving as a source of livelihood for people yet characterised by low yields.



Fig. 1: Grazing sheep (a) and cattle (b) on natural pastures in Northern Ghana

Aim

Assess the suitability of strategies reported in literature for sustainable intensification of MCR farming in Northern Ghana

Methods

The study was conducted in Northern Ghana (Fig. 2) in 2023.

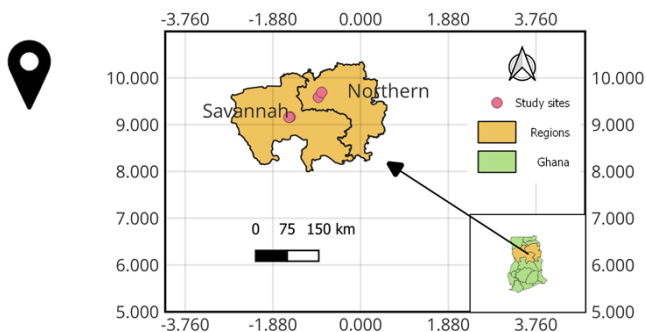


Fig. 2: Map of Northern Ghana (up) within Ghana (inset)



February 2023 - March 2023



Snowball sampling and face to face interviews with 134 MCR farmers



Data on household characteristics, livestock management, feed resources, land accessibility, challenges for livestock-keeping



Literature review via Web of Science, Science Direct and Google Scholar on sustainable intensification strategies for MCR systems



Evaluation of articles on strategies that could be implemented by MCR farmers in N-Ghana

Highlight

Farmer cooperation networks and strategic corralling of cropland are intensification strategies that attract veterinary services & improve soil fertility, respectively. They can increase animal and crop performance in MCR systems of Northern Ghana.

Results

The greatest challenge faced by farmers in the dry season was animal theft (Table 1).

Tab. 1: Seasonal variation in livestock related challenges faced by 134 MCR farmers in Northern Ghana

Challenges	Season	
	Dry (%)	Rainy (%)
Animal theft	46.2	6.7
Animal loss by accidents	18.7	1.5
Feed scarcity	17.9	0.7
Drinking water scarcity	8.9	0
Diseases	4.5	34.3
None	3.8	56.8

Tuber residues were MCR farmers' most widely used feed in the dry season, followed by legume residues (Fig. 3).

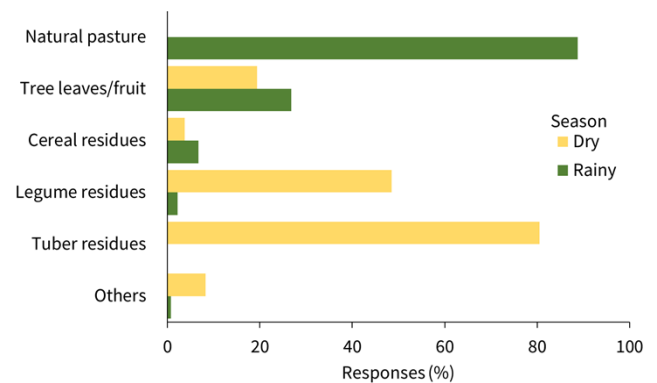


Fig. 3: Feed resources used by MCR farmers across seasons. Multiple answers were possible.

Potential intensification strategies identified from literature were:

- Intercropping cereals with legumes to increase availability of animal feed.
- Planting multipurpose trees on field boundaries to serve animal nutrition and medication.
- Corraling animals on fields to recycle nutrients, increase soil fertility and crop residue feed availability.
- Encouraging MCR farmers to form joint groups that increase attractiveness for veterinary service providers.

