

Improving animal health services to village poultry production systems in Ghana and Tanzania



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Outline

- Project Overview
 - Genomics to Improve Poultry
- Background & Focus
 - Newcastle disease in village poultry
- Qualitative methods
 - Value chain assessments
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- Highlights of Results
 - Constraints, management, impacts of NCD
- Observations
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USAID Feed the Future (FtF) Innovation Lab for Genomics to Improve Poultry

[UC-Davis, SUA, UG, ILRI]

- Objective 4: Conduct poultry value chain assessment and develop a business model for breeding and distribution of chicken line with enhanced Newcastle disease (ND) resistance



Project Overview

GOAL

ENHANCE RESISTANCE TO NEWCASTLE DISEASE (ND) IN INDIGENOUS CHICKENS TO IMPROVE FOOD AND NUTRITIONAL SECURITY, REDUCE POVERTY, AND EMPOWER WOMEN IN AFRICA

IMPACT

IMPROVED FOOD AND NUTRITIONAL SECURITY

WOMEN'S EMPOWERMENT

DECREASED POVERTY

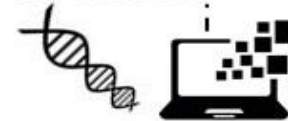
OUTCOMES



Enhanced human and institutional capacity in poultry research, breeding, and genetics



Strengthened partner network for support and knowledge sharing on poultry breeding and genetics



Access to technology and resources for sustained genetic improvement



Improved capacity among smallholder producers for managing risk in their flocks/farms

OUTPUTS



Knowledge of the genetics/genomics of ND resistance



Genetic selection platform for ND resistance and important production traits



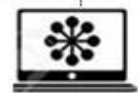
Knowledge of the circulating strains of NDV in Africa



Business plan for chicken breeding and distribution



Understanding of poultry value chain



Training toolkit on application of the genetic selection platform

OBJECTIVES

Develop genetic selection platform

Validate genetic selection platform

Characterize circulating strains of NDV in Africa

Conduct poultry value chain assessment

Develop breeding and distribution business plan

Develop training toolkit and deliver trainings

Study Background

- Village chicken production a major contributor to food security, rural (& female) incomes in Africa
- Low productivity a prevailing feature of village poultry production systems
 - Local breeds
 - Extensive/free-range husbandry
 - Low resource
- Infectious poultry diseases are a key factor driving low productivity
- Newcastle disease accounts for significant portion of chicken mortalities in village flocks.





Research Questions

- What are the key constraints to poultry health care in village production systems in Ghana and Tanzania?
- How do disease-related constraints impact on producers and others in the value chain? How are they currently managed?
- What key policy, market, institutional changes will improve outcomes for M & W farmers, other value chain actors?

Methodology

Value chain assessments (Baltenweck et al. 2019)

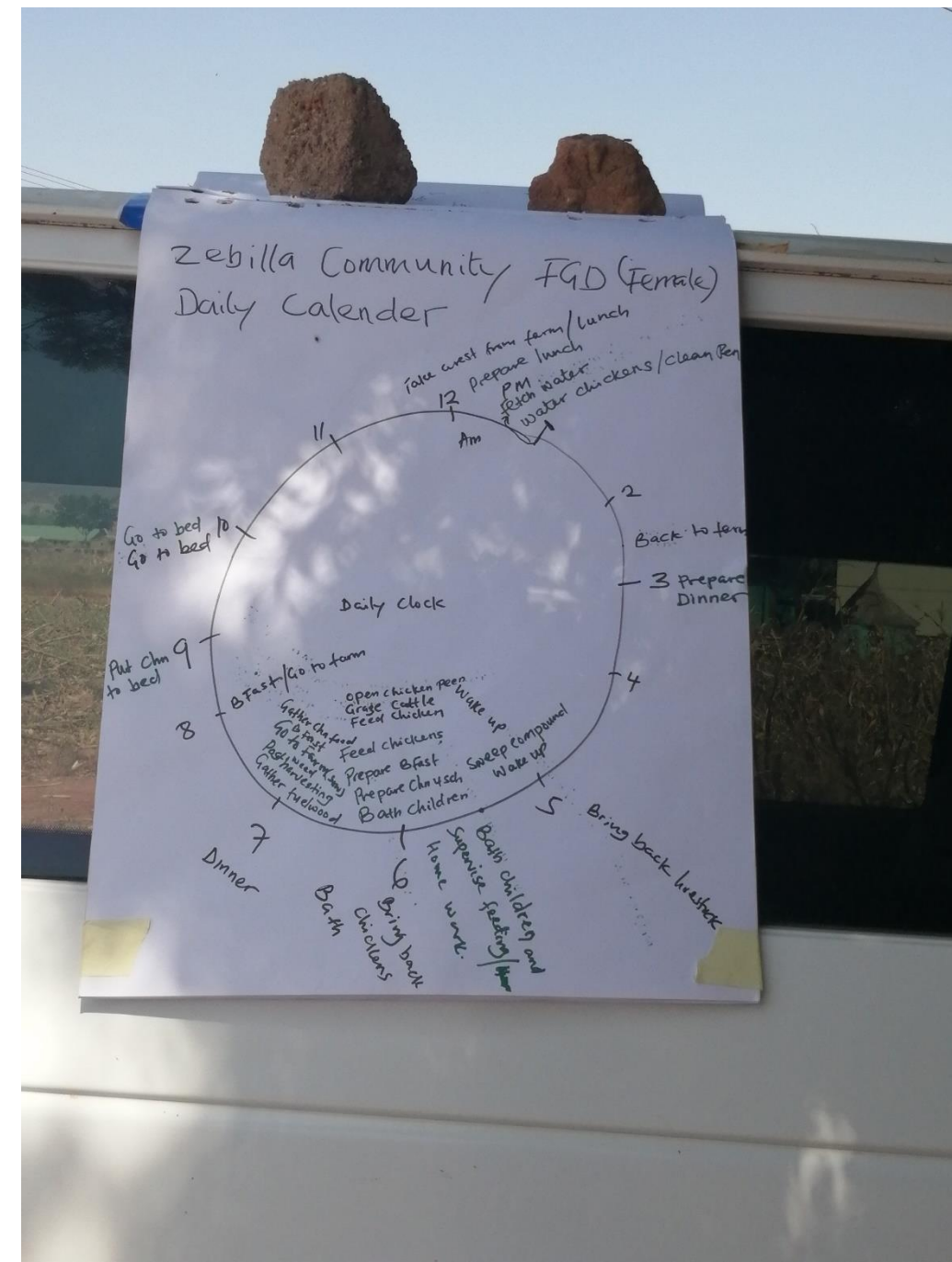
- Gender inclusiveness
- Poultry epidemiology
- Value chain performance

Participatory appraisal methodologies/tools

- Key informant interviews
- **Focus group discussions (FGDs)**
- Interview checklists
- Value chain mapping
- Pair-wise ranking

Study sites

- Ghana (November 2019)
- Tanzania (March 2020)



Focus Groups



Women (10 -12) farmers



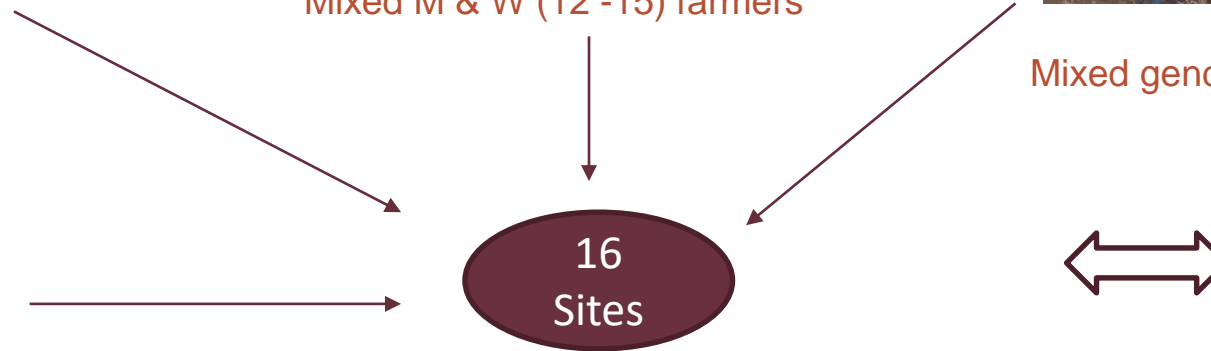
Mixed M & W (12 -15) farmers



Mixed gender (18- 22) value chain actors



Men (10 -12) farmers



Counts of FGD participants, by gender

	MEN	WOMEN	TOTAL
Tanzania	254	241	495
Ghana	267	217	484
Total	521	458	979



Key Informant Interviews

Socio-economic Characteristics of FGD Participants

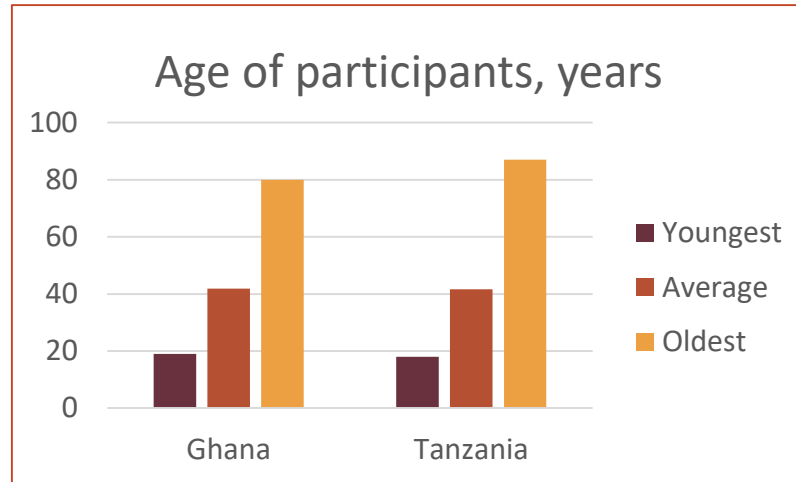


Figure 1: Range and average age of FGD participants in Ghana and Tanzania.

National median age is 21.1 yrs in Ghana; 17.7 yrs in Tanzania.

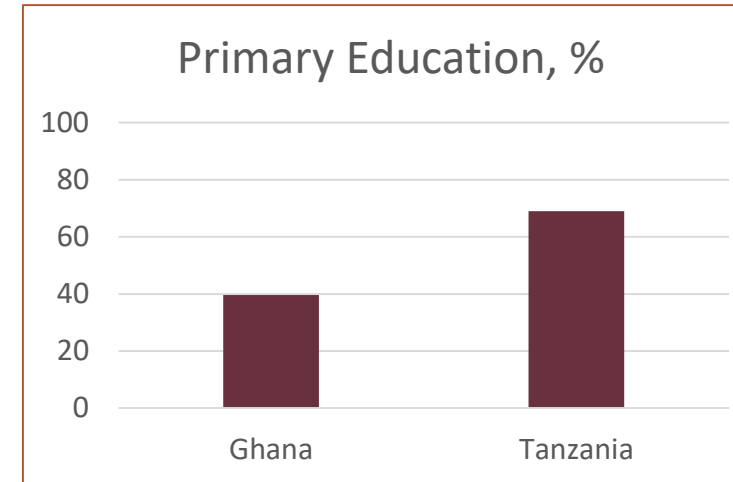


Figure 2: Percentage of participants with primary school education.

National adult literacy rate is 79% in Ghana; 78% in Tanzania.

FGD checklists

Gender

(separate) groups of Women and Men farmers

- Men and women roles in poultry production
- Gender-based challenges in input and output markets
- Gender-based challenges in disease management, impacts

Participatory Epidemiology

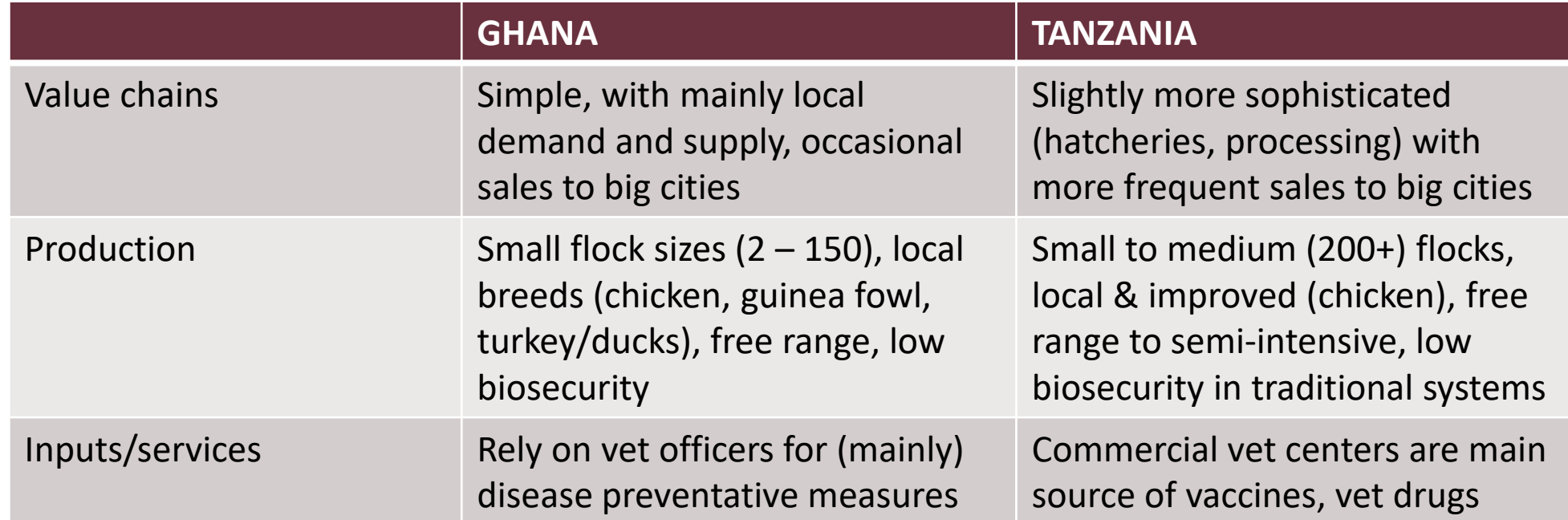
(mixed gender) groups of farmers

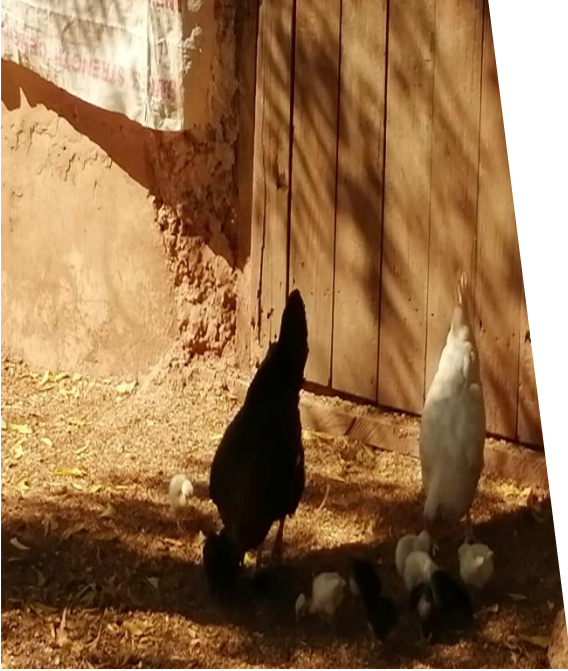
- Priority diseases
- Poultry health constraints and management
- Disease impacts on poultry systems

Value Chains

(mixed gender) groups of farmers, input & services providers, extension/vet providers, traders, retailers

- Value chain mapping, marketing channels and links, volumes, pricing
- Overall constraints of the village poultry value chain
- Disease impacts along the value chain
- Community groups and farmer associations



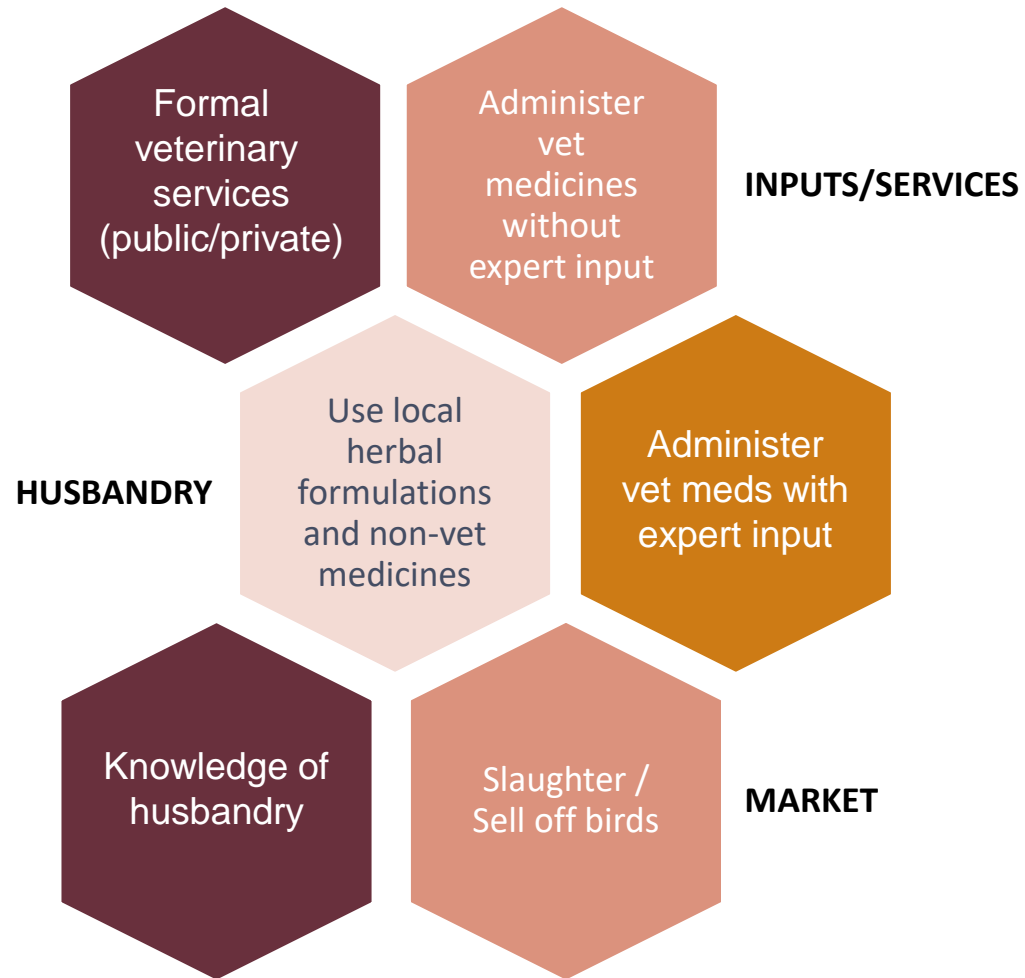


Results from the FGDs

Constraints: -

- Diseases causing mortality and morbidity are Newcastle, fowl pox, worm infestation, infectious coryza, coccidiosis.
- 43% of farmer epidemiology groups reported poor access to veterinary supplies and services.
- Access was more limited for female farmers in Tanzania while women farmers in Ghana not even aware of outlets.
- FGD groups cited unavailability, high prices, low quality of vet inputs, few veterinary officers.
- Low knowledge on appropriate husbandry practices.
- Market-related challenges (credit, capital).

Strategies for Managing Disease Constraints





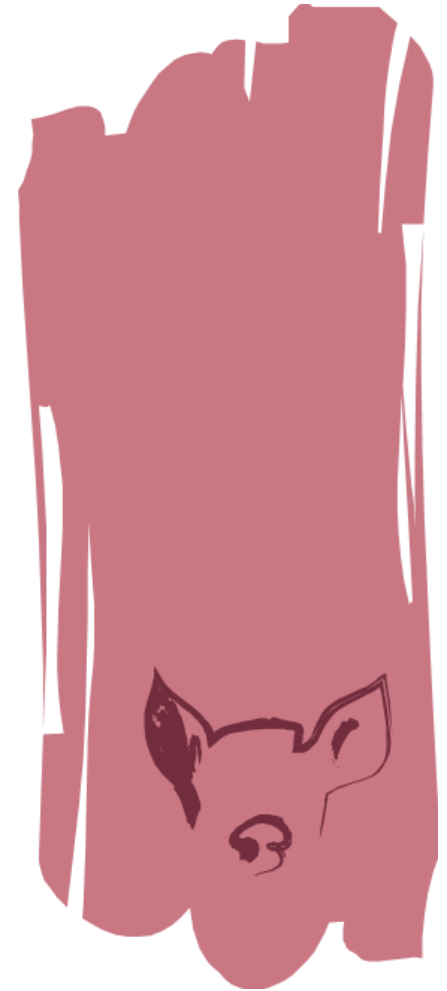
Results from the FGDs

Impacts: -

- Groups in Tanzania and Ghana identified both farmers and traders as most severely impacted by ND/bird losses.
[Training and interventions directed to farmers]
- Poultry diseases affected household welfare, business returns and expansion potential.
- Up to 100% flock mortalities experienced but participants agreed vaccine adherence could prevent this.
- Poultry incomes seemed more important to women farmers, but they had fewer options to mitigate losses
 - Economic and cultural inhibitions exacerbate negative outcomes for women.

Key observations

- Research could help to identify incentives for different value chain actors, address inequitable access of men and women.
- Sector could borrow from successful innovations in other smallholder settings (e.g., low-cost chilling technologies in E. Africa dairy)
- Private sector and communities need drive innovations – no appetite for massive public funding in sector
- ICT offers much in terms of training, communications and coordination (should consider location contexts).



Intervention entry options



Veterinary Supplies
& Services



Poultry
Farm Mgt.



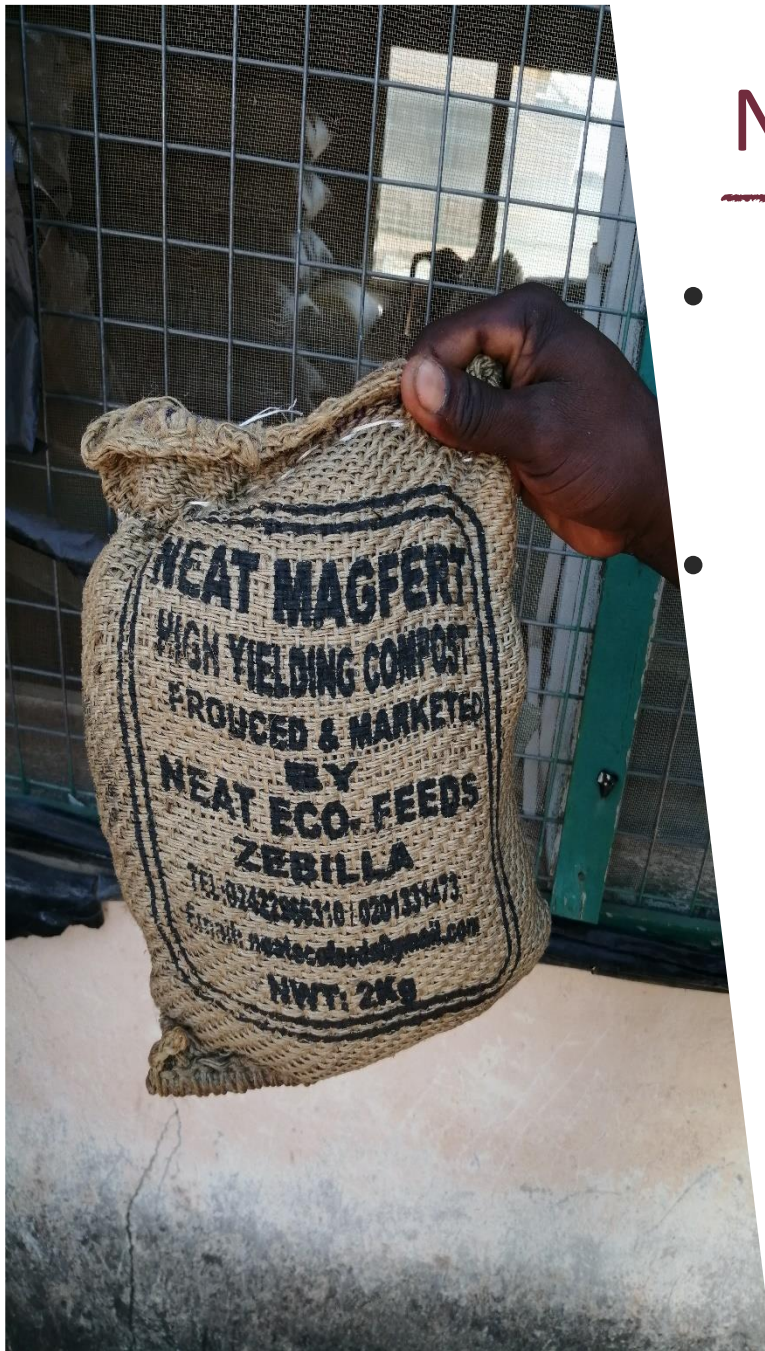
Input & Output
Markets

- Private sector participation
- Communications, Coordination, Collective action

Next Steps

- Paper under review in Frontiers in Veterinary Science (Veterinary Humanities and Social Sciences Section).
- System Dynamics modeling for value chain upgrading of the village poultry production system (Ghana), using Spatial Group Model Building (SGMB) methods.

Consumer choice experiments to assess preferences and demand for chicken ecotypes with enhanced ND resistance (Ghana & Tanzania).



Questions??




Thank You!!



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