Livestock Sector Performance in Sierra Leone: Constraints and Growth Potential Under the Annual Agricultural Report 2023/24

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Abstract: The 2024 Sierra Leone Annual Agricultural Survey (SLAAS) provides a comprehensive overview of livestock production across the country's five administrative regions. Goats dominate holdings (53.2%), followed closely by poultry (55%), while sheep and cattle are less prevalent. Cattle are concentrated in the North-Western region, and pigs remain marginal. Constraints affecting productivity include inadequate veterinary services, dependence on traditional medicines, limited adoption of artificial insemination, and recurrent disease outbreaks. Despite these challenges, programs such as the Feed Salone Strategy (2023–2028) and the National Sustainable Agriculture Development Plan (NSADP) present opportunities for growth by promoting improved breeding, climate-smart practices, and enhanced market linkages (Stats SL/MAFS, 2024).

Keywords: Livestock Production, Veterinary Services, Feed Availability, Constraints.

I. INTRODUCTION

Livestock production has long been an integral part of Sierra Leone's agrarian economy, providing meat, milk, eggs, draught power, manure, hides, and a steady source of cash income to smallholder farmers. According to the Sierra Leone Annual Agricultural Survey, over 70 percent of rural households own some form of livestock, with goats, sheep, and poultry being the most widely kept species (Stats SL & MAFS, 2024). Despite this widespread ownership, livestock productivity remains comparatively low. Yields per animal lag behind regional averages, mortality rates are high, and the contribution of livestock to national GDP has not kept pace with its potential. This disconnect between livestock's social importance and its economic performance provides the backdrop for a critical assessment of sectorial constraints and growth opportunities.

The significance of the livestock sector extends beyond household consumption. Livestock contributes to national food and nutrition security, employment generation, and women's economic empowerment (FAO, 2020; MAFS, 2024). In many parts of Sierra Leone, small ruminants and poultry are managed largely by women and youth, providing a crucial entry point for inclusive agricultural development. Moreover, the government's flagship Feed Salone Strategy (2023–2028) explicitly identifies livestock development as a pillar of its drive to reduce import dependence and increase domestic protein availability (MAFS, 2023). Yet, despite such strategic attention, the sector continues to experience stagnation in productivity and growth. This paradox underscores why a systematic evaluation of constraints and potential growth areas is both timely and necessary.

Several interlinked challenges hinder livestock development. Diseases and parasites remain endemic, with vaccination coverage far below recommended levels. Stats SL & MAFS (2024) records show that only 6,504 cattle, 23,184 goats, and 13,029 sheep received vaccinations in the last reporting year, while far higher numbers were treated with traditional medicine. This pattern indicates a heavy reliance on informal animal health practices due to the scarcity or cost of veterinary services. Feed scarcity is another critical constraint. During the dry season, natural pastures decline sharply in both quality and quantity, forcing animals to subsist on crop residues of low nutritive value. Market infrastructure and access to credit are equally limited, preventing smallholders from expanding herds or investing in improved breeds. Collectively, these factors create a vicious cycle of low input, low productivity, and low income that inhibits the sector from realizing its potential.

International and regional literature echoes these findings. In neighboring Guinea and Liberia, comparable studies highlight similar structural constraints: poor animal health systems, limited feed resources, and weak extension

services (Conteh, Johnson, & Mensah, 2022; Johnson & Mensah, 2023). However, countries that have systematically addressed these challenges show promising outcomes. For example, Ethiopia's Livestock Master Plan combined vaccination campaigns, improved fodder production, and genetic upgrading to significantly raise small ruminant and dairy productivity (ILRI, 2021). These experiences suggest that, with the right policy mix and investments, Sierra Leone can also achieve rapid gains in livestock performance.

The literature also points to the importance of public–private partnerships, especially in feed production, veterinary input supply, and market development. Yet in Sierra Leone, such partnerships remain at a nascent stage, requiring both institutional strengthening and policy coherence.

The problem is therefore not a lack of recognition of livestock's importance, but rather the persistence of systemic constraints that limit the sector's contribution to food security and rural livelihoods. Stats SL & MAFS (2024) data underscore a stark disparity between potential and performance: while ownership levels of goats and poultry are high, productivity indicators such as offtake, weight gain, and egg production remain low. This has implications for nutrition, as per capita consumption of animal-source foods in Sierra Leone is among the lowest in West Africa, as well as for income diversification and resilience to shocks. Without targeted interventions to address these bottlenecks, the government's ambitious goals under the Feed Salone Strategy and the National Sustainable Agriculture Development Plan (NSADP) may not be realized (MAFS, 2023; MAFS, 2024).

A growing body of research also highlights climate change as an emerging threat to livestock systems in West Africa (Thornton, Reenberg, & Tschakert, 2023). Rising temperatures, erratic rainfall, and increasing frequency of droughts reduce pasture availability and water resources, exacerbate disease prevalence, and heighten competition over natural resources. For Sierra Leone's predominantly extensive and smallholder-based livestock systems, these stresses may further erode productivity and exacerbate rural poverty unless climate-smart practices are promoted. Such practices include fodder banks, improved pasture species, water harvesting, and integration of crop–livestock systems to recycle nutrients and enhance resilience.

Given this context, the present study seeks to assess the performance of the livestock sector in Sierra Leone with a focus on identifying key constraints and growth potentials. Using Stats SL & MAFS (2024) data, it disaggregates information by species, management practice, and intervention area to provide an evidence-based foundation for policy and investment decisions. By integrating quantitative data analysis with insights from the literature and policy documents, the study aims to bridge the gap between diagnosis and actionable recommendations. It recognizes that livestock development is not only a technical challenge but also a socio-institutional one, requiring improved governance, extension systems, and farmer participation.

In sum, the livestock sector occupies a strategic position at the intersection of food security, rural livelihoods, and national economic development. Yet it is beset by constraints that have been documented but insufficiently addressed. This study contributes to the body of knowledge by providing an up-to-date, data-driven analysis of these constraints and by exploring pathways for sustainable growth. Its findings are intended to inform government agencies, development partners, and the private sector in designing interventions that can unlock livestock's latent potential and deliver tangible benefits to Sierra Leonean households.

➢ *Objectives of the Study*
The objectives of this study are therefore designed to provide a comprehensive view of livestock holdings, assess major challenges to productivity, evaluate the impact of government and private interventions, and identify actionable strategies for sustainable growth:

- Evaluate production volumes and regional distribution of key livestock species (cattle, small ruminants, and poultry).
- Identify constraints affecting livestock productivity, including feed availability, veterinary services, disease control, and market access.
- Assess the role of government and private sector programs in improving livestock performance.
- Recommend strategies to enhance growth potential in the livestock sector.

II. STUDY METHODOLOGY

➢ *Research Design*
This study employs a descriptive research design, utilizing secondary data from the 2024 Sierra Leone Annual Agricultural Survey (Stats SL & MAFS, 2024). The descriptive design allows for a comprehensive analysis of existing data to identify patterns, trends, and relationships within the livestock sector.

➢ *Study Location*
The study covers all five administrative regions of Sierra Leone: Eastern, Northern, North-Western, Southern, and Western Area. These regions represent diverse agro-ecological zones, each with unique challenges and opportunities for livestock production.
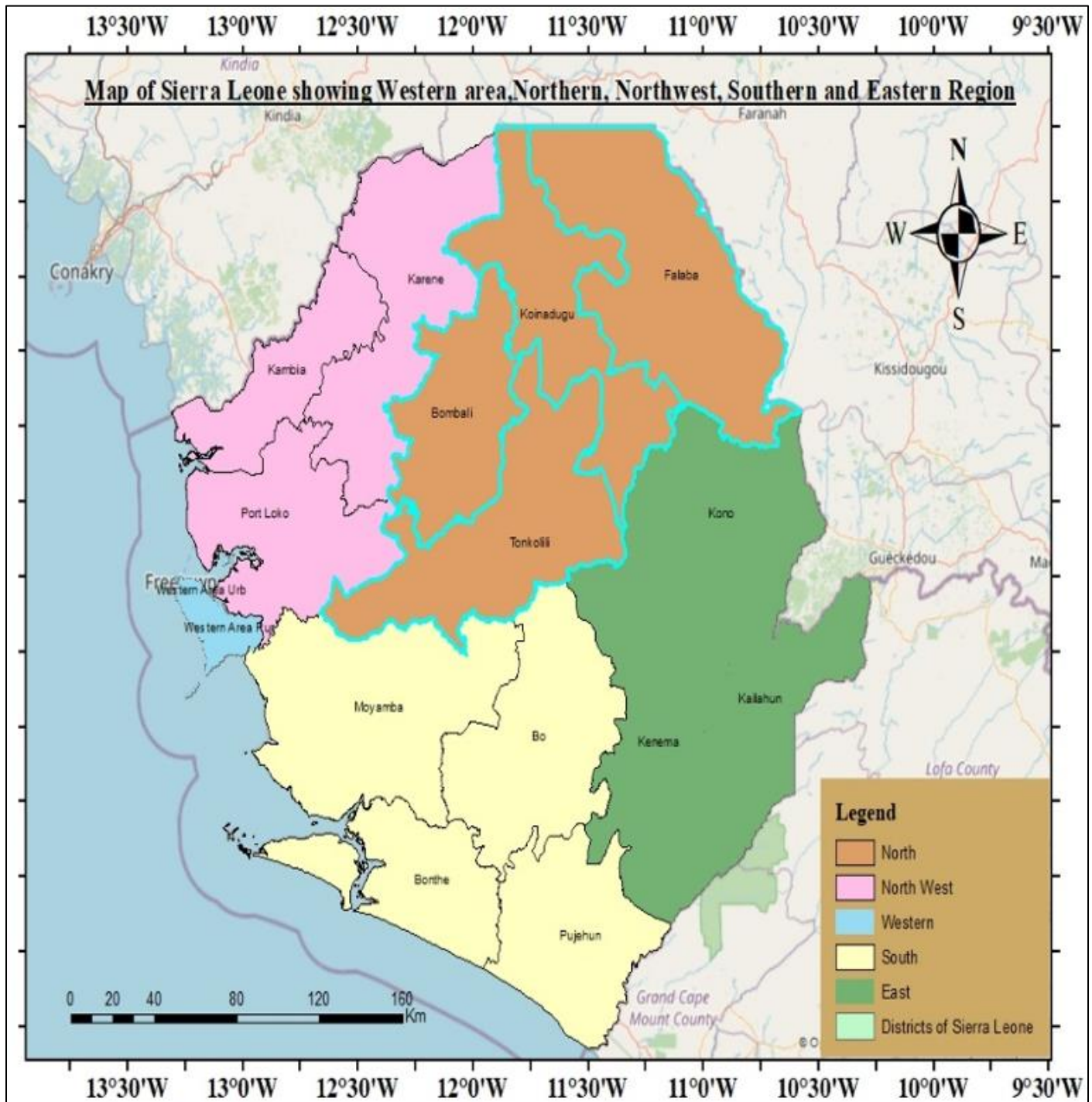
Fig 1 Map of Siera Leone Showing the Five Regions.

> *Study Population, Sample Frame and Sample Size*

The population for this study comprises all agricultural holdings in Sierra Leone. The SLAAS 2024 surveyed a total of 287,898 chicken holdings, 232,549 goat holdings, 118,423 sheep holdings, and 14,443 cattle holdings (Stats SL & MAFS, 2024). These figures provide a comprehensive overview of livestock distribution across the country.

> *Sampling Techniques*

This study used secondary data from the Sierra Leone Annual Agricultural Survey (Stats SL & MAFS, 2024), which applied a multi-stage stratified random sampling approach. Enumeration areas were first selected proportionally within each region, after which livestock-keeping households were randomly drawn from updated community lists. For the present analysis, only households reporting cattle, goats, sheep, poultry, and pigs were extracted, yielding a nationally representative sub-sample of 4,200 holdings across the five regions. Sampling weights were retained to ensure representativeness.

> *Data Analysis*

Data analysis involved descriptive statistics, percentages, frequencies, tables, and graphs. Graphs were

generated to illustrate livestock distribution by region, species-specific veterinary practices, and potential growth areas. Analysis focused on identifying constraints and evaluating the effectiveness of government and private sector interventions, providing actionable insights for policy and practice.

III. RESULTS AND DISCUSSIONS

This section presents and interprets the findings of the study in line with its stated objectives. Using data drawn from the Sierra Leone Annual Agricultural Survey (SLAAS 2024), the results describe the distribution of major livestock species across regions, examine key constraints to productivity, and assess the role of government and private sector programs. The discussion links these quantitative patterns to existing literature and policy frameworks, highlighting both the current performance of the livestock sector and the opportunities for sustainable growth.

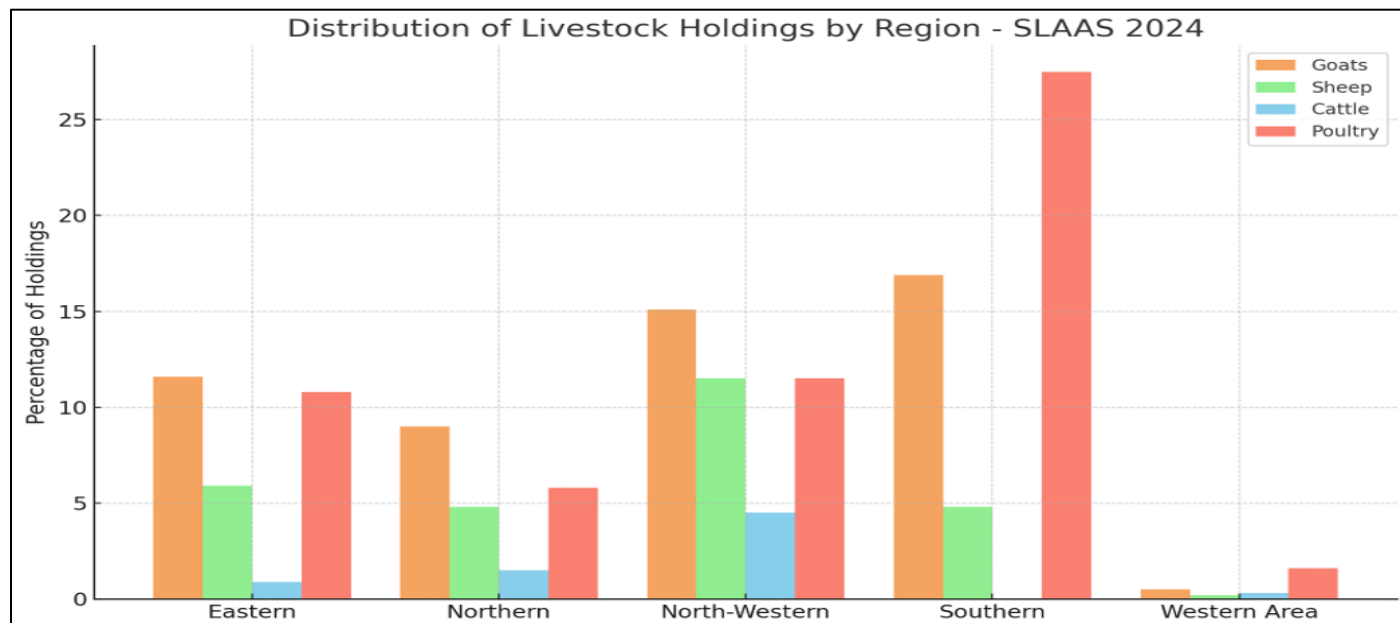➤ *Livestock Production Volumes and Distribution*

Fig 2 Livestock Production Volumes and Distribution
(Stats SL/MAFS, 2024)

The distribution of livestock across Sierra Leone reveals striking regional disparities that have direct implications for policy and investment. The Southern Region dominates poultry production (27.5%) and maintains one of the largest goat populations (16.9%), suggesting that smallholder systems there benefit from relatively better access to feed resources, market outlets, or husbandry knowledge. By contrast, the North-Western Region shows a diversified livestock base with notable shares of goats (15.1%), sheep (11.5%), and cattle (4.5%), indicating mixed farming practices and perhaps greater pasture availability. The Eastern Region exhibits moderate shares of goats and chickens but extremely low cattle holdings (0.9%), reflecting either environmental limitations or a lack of support for large ruminants. The Western Area consistently records the smallest shares for all species, possibly due to urbanization and land constraints. These patterns suggest that national livestock strategies should be regionally nuanced. For instance, interventions aimed at boosting cattle production could prioritize Eastern and Southern Regions, where large ruminants are underrepresented. Likewise, supporting poultry in Northern and Eastern Regions may balance supply and improve rural incomes. In effect, the spatial variation captured in the data serves as a diagnostic tool, showing where targeted inputs, such as veterinary outreach, improved breeding stock, or feed programs, are most likely to yield growth.

➤ *Constraints Affecting Livestock Productivity*

Identifying key constraints is critical for designing effective interventions to improve livestock productivity.

Table 1 Constraints Affecting Livestock Productivity

Species	Vaccination	Veterinary Services	Traditional Medicine
Cattle	6,504	6,211	4,180
Goats	23,184	18,456	31,930
Sheep	13,029	9,625	21,045
Chickens	5,258	4,296	40,052
Pigs	240	180	741

(Stats SL/MAFS, 2024)

Analysis of animal health practices across species highlights the persistent bottlenecks in livestock productivity. Despite goats and sheep having relatively higher vaccination numbers (23,184 and 13,029 respectively), these figures are still modest compared to the overall population of small ruminants nation-wide. Pigs show negligible uptake of veterinary services (240 vaccinated, 180 receiving veterinary care), reflecting either limited demand or chronic service gaps. Most striking is the overwhelming reliance on traditional medicine, particularly for chickens (40,052 cases) and goats (31,930). This dependence indicates that formal animal healthcare systems are either inaccessible, unaffordable, or insufficiently trusted by farmers. Disease outbreaks, compounded by erratic feed supply and weak extension services, further depress productivity and incomes. Without systematic vaccination campaigns and affordable veterinary outreach, productivity gains from better genetics or feed improvements will remain marginal. Addressing these constraints requires a two-pronged approach: scaling up the capacity of public veterinary infrastructure while incentivizing private para-veterinary services to reach remote communities. Farmer education on biosecurity and disease reporting could also reduce mortality and improve market confidence in livestock products. These findings underscore that productivity is not only a function of inputs but also of institutional support systems that safeguard animal health.

➤ *Role of Government and Private Sector Programs*

Evaluating government and private sector interventions reveals their effectiveness and potential areas for improvement.

Table 2 Role of Government and Private sector Programs

Intervention	Target Species	Coverage	Responsible Entity
Feed Salone Strategy 2023–28	All	National	MAFS
NSADP 2010–2030	All	National	MAFS
Private feed mills promotion	Poultry, Goats	Selected	Private sector
Veterinary service expansion	All	Pilot	MAFS + NGOs
50x2030 Initiative	All	Limited	Gov't + Private

(Stats SL/MAFS, 2024)

Government and private interventions form the backbone of livestock sector development, but their effectiveness depends on scale, coordination, and responsiveness to farmer needs. The Feed Salone Strategy (2023-2028) and the National Sustainable Agriculture Development Plan, (NSADP, 2010-2030) provide national frameworks aimed at improving feed availability and broad-based livestock support. However, their implementation often lacks deep penetration at the farmer level, leaving gaps that private actors or NGOs are expected to fill. The data show that private feed mills are concentrated on poultry and goats in selected areas, and veterinary service expansion is still at pilot stage. Similarly, the 50x2030 Initiative reflects an attempt at public-private collaboration but remains limited in coverage. These patterns suggest that while the government has established comprehensive plans, execution and monitoring remain weak, and private sector involvement is geographically uneven. Enhanced public-private partnerships could create synergies, such as co-financed extension programs or joint feed distribution networks. In addition, NGOs could play a catalytic role in introducing best practices or bridging service gaps until markets mature. A robust regulatory environment and incentives for private investment would further stimulate competition and innovation in feed, breeding, and veterinary supplies. The data therefore call for a shift from fragmented initiatives to integrated, multi-stakeholder platforms.

➤ *Growth Potential and Recommendations*

Identifying growth potential helps guide policy, investment, and practical interventions for sustainable livestock development.

Table 3 Growth Potential and Recommendations

Area	Current Constraint	Proposed Intervention	Expected Outcome
Feed Availability	Scarce feed resources	Integrate crop residues & fodder	Improved nutrition & productivity
Disease Control	Low vaccination & vet access	Expand veterinary services	Reduced mortality & higher output
Genetic Improvement	Limited AI & breeds	Introduce improved breeds & AI	Higher meat & milk yields
Market Access	Poor roads & storage	Develop infrastructure	Better income & trade
Climate-smart Practices	Low adoption	Train farmers on resilient methods	Reduced climate vulnerability

(Stats SL/MAFS, 2024)

Identifying growth potential is critical for transforming Sierra Leone's livestock sector into a driver of food security and rural livelihoods. The analysis shows five key areas where interventions can have the most impact: feed availability, disease control, genetic improvement, market access, and climate-smart practices. Feed scarcity remains the most immediate constraint, but integrating crop residues and fodder systems could substantially improve animal nutrition. Expanding veterinary services would reduce mortality and increase output, while introducing improved breeds and

artificial insemination can boost meat and milk yields in the medium term. Poor market infrastructure such as; roads, storage, and cold chains, depresses farmer incomes and leads to high post-harvest losses, so targeted investment there can unlock new market opportunities. Finally, training farmers in climate-resilient practices will enhance long-term sustainability in the face of changing rainfall patterns and disease dynamics. The table underscores that feed and disease control interventions have the highest short-term payoff, while genetic improvement, market infrastructure, and climate-smart practices represent longer-term but equally critical investments. Taken together, these areas provide a roadmap for donors, policymakers, and the private sector to coordinate efforts. Without such a strategic approach, isolated interventions risk producing incremental rather than transformative change.

IV. CONCLUSION

The 2024 Sierra Leone Annual Agricultural Survey clearly demonstrates that the livestock sector remains a vital but unevenly developed component of the country's agricultural economy. Poultry and small ruminants (goats and sheep) dominate national livestock holdings, especially in the Southern and North-Western regions, while cattle and pigs are still marginal. These patterns point to deeply rooted production and market disparities: the Southern region benefits from stronger poultry markets, but the North-Western region holds the highest concentration of cattle, indicating a regional niche that could be expanded.

Constraints identified in the survey, limited vaccination and veterinary coverage, heavy reliance on traditional medicine, poor feed availability, and weak market infrastructure, cut across all species but are particularly acute for poultry and goats. The low adoption of improved breeding and climate-smart practices also limits productivity growth and exposes farmers to disease and climate shocks.

Government programs such as the Feed Salone Strategy (2023–2028) and NSADP (2010–2030) have created a national framework for livestock improvement, but their impact remains diluted by limited private sector and NGO involvement, inadequate decentralization, and weak extension services. Despite these gaps, the SLAAS 2024 data indicate significant growth potential: better feed resources, improved veterinary services, genetic upgrading, stronger market linkages, and resilience-building practices could unlock higher productivity, rural incomes, and national food security.

RECOMMENDATION

Building on the findings of the SLAAS 2024 survey and the analysis presented in this study, the following recommendations are proposed to address the major constraints and leverage the growth potential of the livestock sector:

- Support local feed formulation and processing (e.g., maize, rice bran, and agro-byproducts) through farmer

cooperatives and private sector incentives to reduce dependence on imported feed and lower production costs for poultry and ruminants.

- Increase the reach and quality of veterinary care and livestock extension through mobile clinics, community animal health workers, and partnerships with universities like Njala to improve animal health and productivity.
- Establish regional breeding centers and provide access to improved livestock genetics (especially small ruminants and poultry) to address low productivity and disease susceptibility.
- Develop livestock markets, cold chain infrastructure, and producer groups to improve farm-gate prices, reduce post-harvest losses, and link farmers to institutional buyers (schools, hotels, export).
- Institutionalize routine livestock data collection and analysis at district and chiefdom level to guide evidence-based planning, resource allocation, and monitoring of programs like Feed Salone.

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