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SCIENCE FOR A FOOD-SECURE FUTURE

SUSTAINABLE ANIMAL AND AQUATIC FOODS

AU-IBAR uses feed assessment modelling to support Nigeria and Cameroon livestock investments

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Outcome Brief

Contents

Authors: John Mutua[1], Isabelle Baltenweck[2], Nils Teufel[2], Tunde Amole[2], Ambica Paliwal[2], Fredah Cherotich[2], and Alan Duncan[1]

1 University of Edinburgh, United Kingdom
2 International Livestock Research Institute, Kenya,

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Cover photo: AU-IBAR

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Summary

Here we report the results of a feed assessment and feed balance modelling exercise conducted by the International Livestock Research Institute (ILRI) and partners to guide livestock decisions in Nigeria and Cameroon. The work was commissioned by the African Union Inter-African Bureau for Animal Resources (AU-IBAR) who reported the hand-over of the national feed balance and inventory to the Nigeria Federal Ministry of Livestock Development and the National Bureau of Statistics. A similar process is underway for Cameroon.

Background

AU-IBAR approached ILRI to partner in a Research and Development initiative under the Resilient African Feed and Fodder Systems Project. At issue is the relative lack of data at national scale on livestock feed availability relative to feed demand and on the feeds livestock are being fed, and the limitations of current processes to effectively utilize such information to guide feed development policy decisions, enhance capacities for strengthening early warning systems, which when triggered allow for timely remedial action to reduce vulnerability and forestall feed and fodder crises in the livestock sector.

The feed assessment and balance study consists of two main parts. First, state-of-the-art satellite imagery and other spatial data sets complemented by secondary data (e.g. livestock census) are aggregated across agro-ecological and livelihood zones into detailed maps of feed resources and feed demand, following Fraval et al. (2024). To compare the remotely derived feed balance estimates with primary field-level data, the second part of the study consists of village level surveys conducted at representative locations across relevant agroecological zones. These are designed to support the validation of parameter estimates derived from secondary data and of expert knowledge assumptions as well to collect information on the types and amounts of feed consumed and the density of livestock at the selected locations.

The work entailed a series of capacity development workshops with AU-IBAR and national partners, geospatial analysis, data collection, and data analysis. The Nigerian study culminated in a workshop conducted in Abuja in April 2025. At the event, the feed balance and inventory document was handed over to the Nigerian Federal Ministry of Livestock Development and the National Bureau of Statistics. It was a crucial move towards employing a data-driven approach in the processes of planning and management of the national feed resources, of commercializing feed and fodder production and of developing sustainable livestock production throughout the country. The Cameroon team also attended this high-level event to prepare for the final stages of the analysis in their country.

Partners

- AU-IBAR: lead implementer
- ILRI: lead ground-truthing and research-policy interface
- University of Edinburgh and Jameel Observatory: lead spatial analysis
- Nigeria Federal Ministry of Livestock Development and the National Bureau of Statistics: supply of information, field-level implementation, integration of results into policy framework

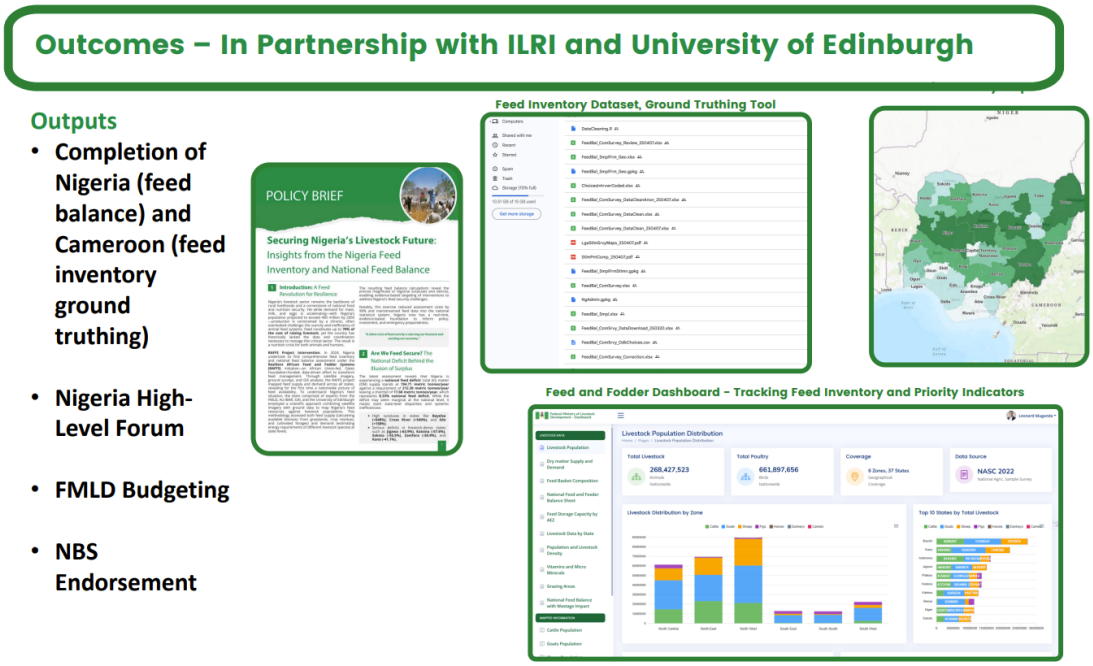
Outcomes and supporting evidence

As stated on their blog, AU-IBAR used the results of the feed assessment and balance modelling conducted by ILRI and partners to guide livestock decisions in Nigeria and Cameroon. The team modelled feed availability using spatial data, then estimated demand using secondary livestock data and local herd parameters. Feed scarcity and surplus hotspots were identified. Traditional feed balance assessments rely on time-consuming household surveys and extensive local data collection, often taking years to complete and involving considerable cost. The satellite-based approach reduced assessment costs and time by 90% compared to these conventional methods while providing near real-time, evidence-based policy formulation. The work was conducted through a series of workshops.

Trainees were very positive: "*The course is very valuable for estimating and preparing regular feed outlooks and feed balances. It will help in planning and preparedness to prevent massive livestock deaths associated with recurrent feed scarcities due to droughts*," said a participant during a training workshop in Nairobi, Kenya.

"*The training workshop was valuable; it will help in formulating livestock feed policy and addressing feed demand in the country*" said a participant during a training workshop in Abuja, Nigeria.

See Bridging data and policy: Assessing livestock feed balances for African livestock on the Jameel Observatory website for more details.



Source: MacOpiyo (2025).

Next steps

The comparison of model parameters derived from spatial and secondary data with survey results is being finalized, a scientific paper is under preparation, and the Cameroon analysis is to be completed.

References

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Contact: animal_aquatic@cgiar.org

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