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Guidelines for African Feed and Fodder Data Ecosystems: Indicators, Dashboards, Data-As-A-Service, and Monitoring

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1. Abstract

Africa's livestock sector is a major contributor to agricultural livelihoods (about 24% of agricultural GDP.) and employs large rural populations, including women. Feed and fodder are the largest cost input in animal production (around 60–70% of production costs. Recent global shocks (climate shocks, COVID-19, and the Ukraine crisis) have severely disrupted Africa's feed and fodder supply chains, causing widespread shortages. These challenges underscore the need for integrated data systems, real-time dashboards, and coordinated data services to inform policy and investment. Recent initiatives highlight this need, emphasizing improved data analytics for evidence-based policy and investment in feed systems. These guidelines build on key project outputs and the AU Data Policy Framework to support AU Member States in harmonizing their feed and fodder data ecosystems

2. Background

Global demand for animal protein continues to rise, driving up feed production and prices. Worldwide animal feed output reached an estimated 1.2 billion metric tons in 2023. At the same time, African feed resources are under growing strain from climate change, land degradation, and market volatility. Many countries face persistent feed deficits – for example, annual feed shortages on the order of 50–60% have been reported in parts of sub-Saharan Africa. Such deficits, compounded by recurrent droughts and other crises, translate into livestock losses, higher feed prices, and threats to food security.

Compounding the supply challenges is a fragmented data landscape. Across Africa, feed and fodder data are collected by various actors (ministries of agriculture/livestock, statistics bureaus, meteorological agencies, research institutes, private feed companies, etc.) using disparate methods. These data, covering crop yields, pasture conditions, market prices, livestock numbers, and more, are rarely interoperable or centrally accessible. Few countries have a single integrated feed data system; in fact, over 72% of African Union (AU) Member States lack a centralized database for feed and fodder data. Data collection efforts are often isolated and irregular – for instance, about 52% of countries collect feed-related data only intermittently, leading to gaps in historical trends. Limited digital infrastructure (especially in rural areas with poor internet connectivity) further hinders real-time data capture and sharing. As a result, decision-makers often receive information on feed crises only after the fact (e.g. reports of livestock mortalities), rather than proactive early warnings based on supply-side indicators like rangeland conditions or feed stock levels. This disconnected data ecosystem, characterized by inconsistent standards and siloed information, impedes evidence-based planning and rapid response.

3. Policy and Strategic Context

Strengthening feed and fodder data systems aligns with Africa's broader development goals, particularly Agenda 2063, which calls for modernized, data-driven agriculture to improve livelihoods and food security. Member States are expected to harmonize national monitoring systems with continental frameworks, recognizing feed and fodder data as essential to achieving these ambitions. The AU Data Policy Framework (2022) reinforces this by emphasizing integrated, secure, and interoperable data systems grounded in principles of trust, accessibility, and quality. It calls for harmonized governance, open access to non-sensitive data, and improved

digital infrastructure to support cross-border data flows—critical for regional trade under the AfCFTA.

Continental efforts have operationalized these priorities, spotlighting data fragmentation and the need for coordinated, investment-ready systems. Recent assessments on Africa's feed and fodder data ecosystems demonstrate that real-time data and multi-stakeholder collaboration are key to evidence-based policies and sector resilience. These Guidelines, grounded in AU frameworks and practical insights, offer Member States a harmonized roadmap for building sustainable, interoperable feed and fodder data ecosystems.

4. Objectives

The Guidelines provide a harmonized framework for AU Member States to manage feed/fodder data, supporting evidence-based decision-making and resilience in the livestock sector. Key objectives are to:

i. **Institutionalize Data Governance** – Embed clear mandates and responsibilities for feed/fodder data within feed and fodder value chain actors and institutions.
ii. **Standardize Data Practices** – Adopt common definitions, indicators and protocols so data are interoperable across agencies and borders.
iii. **Integrate Data Platforms** – Consolidate multiple data streams (surveys, remote sensing, market reports) into national systems (e.g. Integrated Feed and Fodder Management Information Systems) for holistic analysis.
iv. **Align with Continental Goals** – Ensure national feed data initiatives support Agenda 2063, CAADP/NAIP commitments and the AU Data Policy (e.g. by contributing to continental targets and open data spaces).
v. **Enhance Early Warning** – Enable real-time monitoring of feed availability and market conditions so governments can respond proactively to emerging crises. Ultimately, these measures will help Member States to monitor feed supply in real time, plan informed policies, attract investment and protect livestock-dependent communities.

5. Scope

These Guidelines apply to all AU Member States, covering national and sub-national levels. They encompass institutional arrangements, Core ICT infrastructure, feed and fodder data standards and collaborative processes for collecting, managing, sharing and using feed/fodder data. Both technical (platforms, indicators, interoperability) and organizational aspects (governance, capacity development, multi-stakeholder coordination) are addressed. The intended users are government agencies (livestock, agriculture, statistics, environment, disaster management, etc.), national statistical systems, research institutions and value chain actors involved in feed/fodder data. The private sector (feed producers, farmer unions, market information services) and development partners are also recognized as data providers and users. Regional (RECs) and continental mechanisms are included to facilitate cross-border data sharing in line with AU frameworks.

6. Definitions

Key terms used in these Guidelines include:

- **Feed** – Any edible material (plant or animal origin, raw or processed) given to livestock for nutrition. This covers concentrates (grains, oilseed meals, compound feeds), by-products and forages.
- **Fodder** – Coarse or bulky plant feed (forages, grasses, hay, silage, crop residues) provided to livestock, especially ruminants. It emphasizes roughage distinguished from concentrate feeds.
- **Feed and Fodder Data Ecosystem** – The network of stakeholders, technologies and processes for feed data. It includes data infrastructure (databases, platforms, dashboards), governance mechanisms (standards, protocols, stewardship) and the community of actors (government, private sector, farmers, researchers) involved in producing and using feed/fodder data.
- **Integrated Feed and Fodder Management Information System (IFFMIS)** – A centralized digital platform aggregating feed/fodder data from multiple sources. An IFFMIS (often government-operated) provides comprehensive monitoring via databases and dashboards (e.g. on feed supply, demand, prices), supporting decision-making.
- **Dashboard** – A user interface (web or mobile) that visualizes key indicators and data on feed/fodder in real time. Examples include maps of deficit areas, charts of price trends or alerts on critical feed stocks. Dashboards translate data into actionable insights for policymakers and local users.
- **Data-as-a-Service (DaaS)** – A data provisioning model where datasets are made available on-demand (via APIs or subscriptions). In the feed context, DaaS could mean open APIs for feed prices or providing customized analytics reports to subscribers. It treats data as a service, enabling third parties to use data without hosting it themselves. *(Other technical terms follow common AU/FAO usage.)*

7. Guiding Principles

The design and implementation of feed/fodder data systems should reflect AU's core data values:

- **Country Ownership & Institutionalization** – Member States lead and sustain data initiatives through enduring structures, not short-term projects. Assign a dedicated national unit (e.g. Feed Data Coordination Unit) with a clear mandate, budget and high-level reporting line. Formalize governance (policies, legislation) and institutionalize multi-stakeholder bodies (e.g. feed data working groups) that include public agencies, national statistical bureaus, crop agencies, private sector and research institutes. This ensures continuity, accountability and alignment with national priorities.
- **Inclusivity & Collaboration** – All relevant actors should contribute to and benefit from the data ecosystem. Engage government (national and local), farmers' associations, feed industry, development partners and civil society in data generation and use. Inclusive platforms (public–private partnerships, community networks) build trust, improve data quality and ensure services meet diverse needs – from pastoralists to investors.
- **Interoperability & Standardization** – Adopt common definitions, formats and classifications (aligned with FAO/AU standards) so systems can exchange data seamlessly. Use shared code lists, metadata schemas and open APIs. Standardize core indicators (see Section 6) to create a uniform "data language" across countries. This harmonization allows aggregation of national data for regional analyses, benchmarking and continental reporting.

- **Data Quality & Integrity** – Ensure data are accurate, reliable and timely. Institute quality assurance at all stages: validate surveys, ground-truth remote-sensing, cross-check figures, and regularly audit databases. Document metadata (sources, methods, uncertainties) to maintain transparency. Encourage a culture of continuous improvement where data gaps are identified and closed. High-quality data underpin credible analyses and trust in the system.
- **Accessibility & Open Data** – Non-sensitive feed and fodder data should be made openly available by default, consistent with the AU Data Policy. Publish aggregated datasets, survey findings and analytical dashboards on national portals or dedicated platforms so researchers, innovators and the public can use them. Open access spurs innovation (e.g. mobile apps for farmers) and maximizes the value of data collection efforts. Data openness must balance with privacy: any personal or proprietary information must be anonymized or protected.
- **Privacy & Security** – Safeguard sensitive data and ensure system security. Comply with data protection laws (e.g. AU's Malabo Convention). Implement cybersecurity measures, access controls and encryption for databases. Apply "privacy by design" so opening data does not compromise individual or business confidentiality. Trust in the system (especially from private-sector contributors) depends on robust privacy and security practices.
- **Evidence-Based Decision-Making** – Data systems must lead to action. Feed data collection should support planning, crisis response and policy formulation. Integrate data into budgeting and development planning (e.g. use feed balance figures to inform trade and subsidy decisions). Establish a clear "data-to-policy" loop: regularly analyze data (via dashboards/reports), derive recommendations, implement changes and monitor outcomes. Institutionalize periodic reviews (annual feed outlooks, dashboard briefings) so data directly inform management.
- **Innovation & Sustainability** – Leverage modern technology (remote sensing, machine learning, mobile apps, cloud computing) to improve feed data systems. For instance, use satellite vegetation indices for pasture monitoring or AI for forecasting shortages. Favor open-source and vendor-neutral tools to prevent lock-in. Crucially, ensure sustainability: tailor solutions to local capacities, plan for long-term financing and maintenance, and invest in human capacity (training data analysts, GIS experts) alongside technology. This balance of innovation and sustainability makes data ecosystems resilient to future challenges.
- **Alignment with Continental Frameworks** – Ensure coherence with AU goals and indicators. National feed data systems should feed into broader continental targets (Agenda 2063, CAADP/Malabo, AU Data Policy). For example, if Agenda 2063 includes livestock productivity metrics, ensure the feed data system can supply necessary inputs. Participate in AU/REC-level reporting and observatories. By aligning with continental KPIs and processes, countries build a shared African data space for feed and strengthen their voice in global fora.

These principles – embodying transparency, trust, collaboration and innovation – underpin the specific guidelines below.

8. Guidelines for Member States

To operationalize the above principles, AU Member States are advised to implement the following measures:

8.1 Institutional Arrangements

- **Mandates and Coordination:** Establish a clear institutional framework for feed data. Designate a lead agency or unit (e.g. within the Ministry of Agriculture or Livestock) with authority, budget and a high-level reporting line. Form an inter-ministerial steering committee or task force to coordinate across sectors (livestock, crops, environment, statistics, meteorology, disaster management, etc.). Include private-sector and NGO representatives in a Feed Data Technical Working Group to align priorities and facilitate data-sharing (e.g. with feed manufacturers or farmers' associations). These bodies should meet regularly to review progress and integrate feed data activities into national plans.
- **Integration with National Systems:** Embed feed/fodder data collection in official statistics and planning processes. For example, include feed questions in agricultural surveys, and monitor rangeland conditions as part of the national M&E framework. Ensure feed indicators are reflected in national development strategies and reporting (e.g. livestock reports should include a feed balance analysis).
- **Resource Mobilization:** Allocate dedicated funding in national budgets for feed data (surveys, ICT infrastructure, capacity building). Where domestic resources are limited, seek support from development partners (e.g. in data capacity-building or climate resilience programs) in alignment with continental data initiatives. Encourage regional collaboration: work with Regional Economic Communities (RECs) and AU-IBAR to harmonize methods and share expertise. Participate in joint feed assessments, satellite analysis and early-warning initiatives for transboundary challenges. This approach supports the AU Data Policy goal to "promote and facilitate data flows within and among Member States".

8.2 Core Indicators for Feed Systems

- **Standardize Key Metrics:** Define and collect a common set of core indicators on feed/fodder availability, use and resilience. Harmonized indicators ensure comparability and facilitate regional aggregation. At a minimum, Member States should monitor:
    - **Feed Supply-Demand Balance:** e.g. total annual feed production (pasture biomass, crop residues, fodder crops, commercial feeds) plus imports, exports and stocks, against estimated demand (based on livestock numbers and feed requirements). Compute a national feed balance (surplus/deficit) as a headline indicator.
    - **Production/Availability:** e.g. area under fodder crops, volumes of crop residues available, and grazing yields (using surveys and remote-sensing biomass indices).
    - **Feed Quality:** e.g. average nutritional content of feeds, prevalence of contaminants (aflatoxin levels, etc.).

- **Livestock Productivity & Practices:** e.g. share of farmers using improved feeds, average animal body condition, feed conversion rates in commercial systems.
- **Market/Price Trends:** e.g. monthly prices of key feed commodities (maize grain, hay, oilseed cakes) in major markets, feed-to-product price ratios, and volumes of commercial feed sales. Price spikes or feed-price ratios can signal emerging shortages.
- **Investment and Enterprise Data:** e.g. number of licensed feed mills or fodder processing units, investment flows (loans, grants) into feed infrastructure, number of agro-dealers selling feeds by region.
- **Emergency/Environmental Indicators:** e.g. frequency of drought-related feed alerts, livestock mortalities due to feed scarcity, rangeland condition indices, pasture regeneration rates.

- **Regular Data Collection:** Collect these indicators routinely (annual surveys, periodic remote-sensing, and frequent market monitoring). For example, feed balances, production and investment indicators can be updated annually, while prices and grazing indices may be updated monthly or seasonally. Integrate these data into national dashboards for easy access. Member States should customize this core list to national priorities, but maintain the common baseline to enable continental synthesis.

8.3 National Dashboards & Digital Infrastructure

- **Develop Interactive Dashboards:** Build a national feed/fodder dashboard (within the IFFMIS) as the public interface for data visualization. The dashboard should present core indicators in real time, with customizable views for different users. For instance, policymakers need national-level summaries (e.g. aggregate feed balance, price trend graphs, deficit-area maps), while extension officers may need district-level details or commodity-specific data. Include maps (e.g. vegetation biomass, drought hotspots), time-series charts, and comparison tools. Crucially, incorporate alert mechanisms (e.g. color-coded warnings or automated notifications) when key indicators (like feed stocks or prices) cross critical thresholds. Real-time updates and multi-language support for broad accessibility is recommend.
- **Integrate Diverse Data Streams:** Ensure the dashboard's backend is linked to multiple data sources. Use a layered data collection approach: combine surveys, administrative reports, remote sensing (NDVI or biomass indices) and crowdsourced inputs. Establish automated data pipelines to the database. For example, mobile apps used by field officers can feed in market prices or pasture observations; satellite grazing indices can be imported via APIs; and national statistics (e.g. annual crop yields) can be synced from statistical bureaus. Develop Application Programming Interfaces or data exchange protocols so that other systems (weather, markets, etc.) can push/pull data in standardized formats. This integration minimizes manual entry and keeps information current.
- **Host and Maintain Systems:** Host the IFFMIS on secure national servers or regional cloud services, with government oversight. Assign a technical team (IT staff, data managers) to maintain the system and user interfaces. Institutionalize regular data updates (e.g. yearly surveys, weekly price uploads) to keep the dashboard live. Nigeria's

experience of transferring its national feed inventory to the Ministry of Agriculture demonstrates how the platform becomes a national asset. Develop user manuals and conduct training for government planners, extension workers, researchers and other stakeholders. Teach users how to interpret dashboard outputs and encourage feedback mechanisms for reporting data issues or improvement requests. Continuous user engagement will enhance system relevance and quality.

8.4 Data-as-a-Service (DaaS):

- **Open Data Services:** Publish non-sensitive feed/fodder datasets (e.g. aggregated inventories, survey results, GIS layers) as open data through government portals or the national dashboard. This aligns with AU open-data directives and enables entrepreneurs, researchers and agribusinesses to leverage the data (for example, by building decision-support tools or mobile apps).
- **APIs and Interoperability:** Provide APIs that allow third parties to query feed data on demand. For example, an API could supply daily feed price quotes or pasture biomass levels to private agritech services. Linking feed databases to external market data sources for trend analysis is recommend. This fosters innovation and public–private partnerships by treating data as a shared resource.
- **Data Products & Services:** Consider subscription or fee-based models for specialized data products (e.g. high-resolution forecasts, tailored analytics reports) to offset costs. For instance, insurers or large agribusinesses may pay for advanced feed shortage alerts. Any commercial arrangements must respect national data policies and AU guidelines on data exchange and ownership.
- **Technology Infrastructure:** Leverage cloud computing and big-data tools for storage and analysis. Follow AU recommendations to build national/regional data infrastructure (cloud servers, analytics platforms) to support advanced technologies (AI, machine learning) in agriculture. Cloud hosting provides scalability for data spikes (e.g. during crises) and facilitates collaboration across agencies.

8.5 Private Sector Integration & Investment Metrics

- **Engage Industry and Farmers:** Establish mechanisms for private actors (feed millers, agro-dealers, dairy/poultry associations, farmers' organizations) to contribute data. For example, require licensed feed mills to report annual production to national databases, and encourage farmer groups to share production and price information. Public–private working groups can negotiate data-sharing agreements, building trust and ensuring the national data pool reflects the entire value chain.
- **Track Feed Sector Investment:** Include indicators on feed-sector investments in national monitoring. Track metrics such as the number of new feed enterprises, volumes of public/private investment in feed infrastructure, and international partnerships. Reporting these data can highlight commercialization progress and attract further financing.
- **Measure Policy Impact:** Define metrics to assess the effect of feed-related policies (subsidies, guaranteed purchases, input support) on production and outcomes. Use data-driven ROI calculations: e.g., compare livestock productivity or mortality rates before and

after policy implementation. Quantifying the impact of interventions (through data) helps demonstrate value to stakeholders and can justify continued or expanded support.

- **Market Information & Financing:** Use the feed data system to support market development. Publish regular feed price trends and availability forecasts to reduce uncertainty and encourage commodity exchange participation. Reliable, transparent data lower perceived risks and enable banks and investors to finance feed businesses. As data reliability grows, private financiers gain confidence in supporting feed enterprises.

8.6 Emergency Monitoring & Early Warning

- **Integrate Crisis Indicators:** Build early-warning triggers into the data platform. Set alerts for critical thresholds (e.g. NDVI or biomass indices dropping below normal, sudden feed-price surges). Link feed data with climate/rainfall models to forecast pasture shortages. For example, a 30% drop in expected forage yield could automatically trigger an alert for action.
- **Rapid Data Collection:** Establish rapid survey and reporting channels during crises. In droughts or floods, use SMS-based surveys or satellite imagery to update key indicators daily. Produce geospatial maps of hotspots needing feed aid or market interventions.
- **Integration with Disaster Frameworks:** Ensure feed data feed directly into national and regional disaster risk systems. For example, a feed shortage alert should notify food-security committees or livestock emergency task forces. Coordinate with broader networks (e.g. FEWSNet, climate advisories) as part of a unified early-warning system. This aligns with AU recommendations for seasonal forecasts and contingency planning.
- **Scenario Modeling:** Provide tools (within the dashboard or separate modules) for scenario analysis and contingency planning. For instance, model the feed deficit under 50% below-normal rainfall. Train staff to run these simulations and conduct regular drills. Embedding such functionality will enhance preparedness and inform proactive policy responses.

8.7 Data Interoperability & Cross-Border Systems

- **Harmonize Data Standards:** Adopt continental/international definitions and classifications (e.g. FAO feed-type categories, livestock classes) to ensure cross-country comparability. Align with AU data specifications for agriculture. Use common metadata and exchange protocols so systems are interoperable.
- **Cross-Border Data Sharing:** Collaborate with neighboring countries and RECs on transboundary feed issues. Share data on migratory grazing patterns, cross-border hay trade and regional pasture conditions. The AU Data Policy encourages mechanisms for data flows among states. For example, develop joint pasture maps or region-wide feed inventory datasets for shared ecosystems.
- **Regional Dashboards:** Contribute national data to regional/continental platforms (e.g. an African livestock feed atlas). AU-IBAR or the AU Commission may host pan-African dashboards aggregating Member State inputs. Such multi-country dashboards support peer learning (benchmarking feed balances across borders) and inform continental policymaking.

- **Data Portability:** Use open-source or widely adopted technologies to avoid vendor lock-in. This ensures that Member States can migrate or scale systems without major obstacles. In line with the AU Data Policy, promote data portability to enhance competition and user choice.

9. Implementation Modalities

To translate these guidelines into practice, Member States should undertake the following steps in a structured manner:

- **Official Endorsement:** Adopt the Guidelines at the highest political level (e.g. in a Council of Ministers or national livestock sector conference). Formally align national policies with the AU Data Policy and Agenda 2063.
- **Governance Structures:** Establish national working groups or task forces to oversee implementation, drawing on the above Institutional Arrangements. Embed feed-data responsibilities into existing strategies, plans and budgets. Clear mandates, accountability and coordination mechanisms (as outlined in Section 6.1) are essential for successful rollout.
- **Resource Allocation:** Allocate funding and personnel for ICT infrastructure (servers, cloud services, sensors) and human capacity (data analysts, field officers, IT specialists). Pursue partnerships with donors or private sector to support platform development, training programs and ongoing maintenance.
- **Indicator Adoption:** Officially adopt the core indicator set (Section 6.2) in all relevant data collection efforts. Incorporate these indicators into national M&E frameworks and reporting systems (e.g. include feed metrics in livestock/food security reports). This standardization will ensure data consistency and comparability.
- **Data Openness & Innovation:** Launch or enhance open data portals for feed/fodder information. Encourage universities, startups and civil society to use the data – for example, by hosting hackathons or innovation grants. Provide APIs and developer support. This stimulates private-sector solutions and multiplies the impact of collected data.
- **Regional Cooperation:** Build linkages with neighboring countries through RECs and AU networks. Share tools and best practices, participate in AU-IBAR workshops and joint projects (e.g. shared satellite analysis for cross-border rangelands). Regional collaboration magnifies capacity and addresses challenges that span borders (nomadic routes, trade corridors, drought belts).
- **Crisis Preparedness:** Integrate feed data systems with national disaster management plans. Use the established early-warning data to trigger contingency actions (feed imports, fodder relocation, supplemental feeding programs) before shortages escalate into emergencies. Ensure coordination with food-security and livestock emergency committees.
- **Performance Monitoring:** Monitor uptake and impact of these measures. Report regularly (e.g. annually) to AU-IBAR and relevant AU bodies on progress (number of systems implemented, data updates, user satisfaction, response times, etc.). Use these reports to adjust policies and investments. This feedback loop of "plan–act–review" will institutionalize a culture of evidence-based management in the feed sector.

10. Monitoring and Evaluation

Member States should embed M&E in their feed-data initiatives to track progress and outcomes:

- **Baseline Assessment:** Conduct an initial evaluation of the national feed data landscape (existing systems, data gaps, infrastructure and capacity). Document baseline values for core indicators (feed balance, yields, prices, etc.) and system performance. This provides a reference point for future comparisons.
- **Regular Reviews:** Include feed data metrics in periodic agricultural sector reviews and livestock development reports. For example, track the number of stakeholders accessing the dashboard, data update frequency and policy decisions influenced by the data. Report annually to continental bodies (AU Commission, relevant STCs) on key metrics and challenges. Align these reporting cycles with Agenda 2063 and SDG monitoring.
- **Impact Evaluation:** Periodically assess how improved data systems affect outcomes. This may involve case studies showing how better data led to quicker crisis response or increased feed-sector investment. Track broader indicators such as reductions in livestock mortality or increases in feed production that can be attributed to data-driven policies.
- **Data Quality Audits:** Routinely audit the accuracy and completeness of data. For instance, cross-validate national feed-stock reports with satellite estimates or independent surveys. Document metadata on data coverage and reliability, and publicly report data limitations. Continuous auditing maintains confidence in the system.
- **Capacity Metrics:** Monitor capacity-building results. Record the number of personnel trained, helpdesk requests resolved, system uptime and usage statistics. These indicators reflect the sustainability of the data ecosystem over time.
- **Alignment with Continental KPIs:** Where possible, link feed data indicators to AU/SDG indicators (e.g. cattle productivity under Agenda 2063). This ensures that feed data contribute to broader development monitoring frameworks and facilitates resource mobilization.

An effective M&E framework closes the loop between data collection and policy feedback. By routinely reporting against these guidelines, Member States demonstrate accountability, encourage peer learning, and show contributions toward continental food-security and integration goals.

11. Institutional Roles

Successful implementation requires coordinated roles at all levels:

- **Member States** (Governments) – Lead the process: establish national policies and institutions for feed data (as above), allocate budgets, enforce standards and ensure regular data collection. Designate agencies (ministries of livestock/agriculture, statistics bureau) to operate the IFFMIS and dashboards. Integrate feed data into national plans, budgets and disaster management systems. Promote capacity building for staff. Implement privacy/security laws and open-data policies. In short, Member States are the primary custodians of their feed data ecosystems.
- **African Union Commission (AU) and AU-IBAR** – Provide continental leadership and technical support. AU-IBAR will coordinate implementation of these Guidelines, harmonize indicator sets, and facilitate training and knowledge exchange. The AU

Commission (including relevant STCs) should incorporate feed-data indicators into continental monitoring and use feed data in policy advisories. AU-IBAR can host a continental dashboard or repository for aggregated feed data, enabling peer comparison and informing AU-level decisions.

- **Regional Economic Communities (RECs)** – Facilitate regional cooperation on feed data. RECs should promote standard methodologies among member states, coordinate transboundary data sharing (e.g. cross-border grazing maps), and support capacity building across countries. RECs can help harmonize data collection instruments and advocate for feed data in regional agricultural strategies.
- **National Statistical Systems and Research Institutions** – Integrate feed/fodder questions into national surveys and censuses. Provide expertise in data analysis, modelling and GIS. Research institutes and universities can partner with government to validate data (e.g. field validation of satellite estimates) and to develop analytical tools and models (e.g. forage growth forecasts).
- **Private Sector and Civil Society** – Data providers and innovators. Feed manufacturers, traders, banks and farmer organizations should routinely report production, sales and price data to national platforms. They should participate in consultative working groups and benefit from the data (e.g. market information). Tech companies and NGOs can develop apps, decision tools and business models using the open data and APIs provided.
- **Development Partners** – Offer financial and technical assistance. Donors and multilateral programs should align with these Guidelines when supporting agricultural data or livestock projects. They can fund initial system development, remote-sensing subscriptions, training programs and continental coordination. Partners should also respect AU data policies (promote open standards, build local capacity).

Each stakeholder's responsibilities should be formalized (e.g. in MoUs or policy documents) to ensure a cohesive ecosystem. By embracing the roles above, AU Member States and partners will build a resilient, evidence-driven feed and fodder sector that supports Africa's food security and economic integration goals.

12. References

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