# iStock: AI-Powered Livestock Decision Support (Business Model Canvas)

*Adapted from the TumaTask structure, focused on a RAG application for livestock farming.*

## 1. Customer Segments

* **Small to Medium Commercial Farmers:** Cattle, dairy, swine, or poultry producers who need immediate, reliable health and nutrition advice but lack direct access to a full-time veterinarian or nutritionist.
* **Agricultural Extension Officers/Veterinary Technicians:** Professionals who require a centralized, citable knowledge base for fieldwork and quick diagnostics.
* **Agri-Business Consultants:** Firms needing to standardize and ground their advisory services in real-time, localized data.

## 2. Value Propositions

* **Immediate, Verified Health Advice (RAG Core):** Instant, accurate, and citable diagnosis and treatment protocols for animal diseases, grounded in official veterinary and government data.
* **Optimized Feed Formulation:** Generates least-cost, balanced feed rations based on current animal metrics (weight, age, production stage) and the nutritional analysis of local raw materials.
* **Proactive Alerts:** Converts real-time sensor/IoT data (e.g., reduced rumination, fever spikes) into plain-language, actionable management strategies.

## 3. Channels

* Mobile Application (iOS/Android)
* Web Dashboard (for farm managers/consultants)
* Veterinary/Agricultural Trade Shows and Expos
* Direct partnerships with Feed Mills and Veterinary Drug Suppliers.

## 4. Customer Relationships

* **Self-Service (Freemium Tier):** Basic symptom checker and public knowledge base access.
* **Dedicated Account Manager (Premium/Enterprise Tier):** Personalized onboarding, custom knowledge base integration (for large farms' proprietary records), and API access.

## 5. Revenue Streams

* **Subscription Fees (Primary):**
  + **"Farmer Pro":** Monthly/Annual fee for advanced RAG queries, feed optimization, and sensor integration.
  + **"Enterprise Vet":** High-tier subscription for multi-user access, API usage, and proprietary data indexing.
* **Data Licensing:** Anonymized, aggregated local livestock data insights sold to feed companies or pharmaceutical firms (with strict privacy controls).

## 6. Key Resources

* **Proprietary Vector Database:** Indexed technical documents (veterinary textbooks, regulatory documents, peer-reviewed journals).
* **Advanced AI/ML Models:** Image recognition for visible symptoms (e.g., skin lesions), and the RAG framework (LLM, embedding models).
* **Software Staff:** AI Engineers, Backend Engineers (Firestore/tRPC), and Veterinarians/Agronomists for data validation.

## 7. Key Activities

* **RAG Knowledge Base Maintenance:** Ongoing validation, indexing, and updating of scientific and regulatory documents.
* **Model Training and Improvement:** Enhancing multimodal diagnosis (image analysis) and feed formulation accuracy.
* **Customer/Technical Support:** Assisting farmers with sensor integration and complex query resolution.

## 8. Key Partnerships

* **University Extension Services/Veterinary Associations:** For access to official, localized research, reports, and expert review.
* **IoT Hardware Providers:** Integration agreements for collar/ear tag sensor data streaming.
* **Pharmaceutical/Feed Manufacturers:** To ensure the index contains the latest product efficacy and dosage information.

## 9. Cost Structure

* **IT/Cloud Hosting (Highest Cost):** Vector database hosting, LLM inference costs (API usage), and Firebase/Function costs.
* **Data Acquisition and Validation:** Salaries for veterinarian staff to clean and validate indexed documents.
* **Labor:** Development, Product, and Support teams.
* **Marketing/Customer Acquisition.**