

AgroLink

An AI-powered Livestock Manager

1. Introduction

AgroLink is an AI-powered livestock and agriculture management platform designed to connect farmers, veterinarians, and customers under a single ecosystem. It empowers farmers with tools for livestock health tracking, marketplace participation, and AI-driven insights while enabling veterinarians to provide remote consultations and customers to access quality livestock products.

The application integrates animal management, task and vaccine scheduling, AI-powered health analysis, marketplace services, and communication tools into one solution. AgroLink's vision is to transform traditional livestock farming into a data-driven, connected, and sustainable system.

2. Scope

AgroLink aims to serve as a **comprehensive digital ecosystem** for the livestock industry, covering:

- **Farm Management:** Animal registration, task scheduling, vaccination records, farm analytics.
- **Healthcare:** AI-based symptom analysis, disease prediction, and direct vet consultations.
- **Marketplace:** Animal and product sales, price predictions, and online order management.
- **Communication:** Secure chat and appointment systems linking farmers, veterinarians, and customers.
- **AI Assistance:** Smart chatbot, market insights, food recommendations, and predictive analytics.

The app is designed to work in multilingual environments (English & Bengali) and supports mobile-first operations with a token-based subscription model for premium services.

3. Users and Their Roles

3.1 Farmers

- Manage livestock profiles (animal registry, health, vaccination, breeding).
- Track farm tasks and schedules.
- Access AI-powered tools (symptom checker, market analysis, food suggestions).
- Communicate with veterinarians and customers.
- Sell livestock and products in the marketplace.
- Manage appointments with vets.

3.2 Veterinarians

- Create and manage professional profiles.
- Verify licenses and specialties.
- Provide remote consultations and chat support.
- Manage appointments with farmers.
- Access a professional dashboard with metrics.

3.3 Customers

- Register as individual or business buyers.
- Browse livestock and farm products.
- Place and manage orders.
- Chat with farmers about animals/products.
- Track order history and status.

3.4 Universal Users (All Roles)

- Secure authentication and session management.
- Multilingual support (English & Bengali).

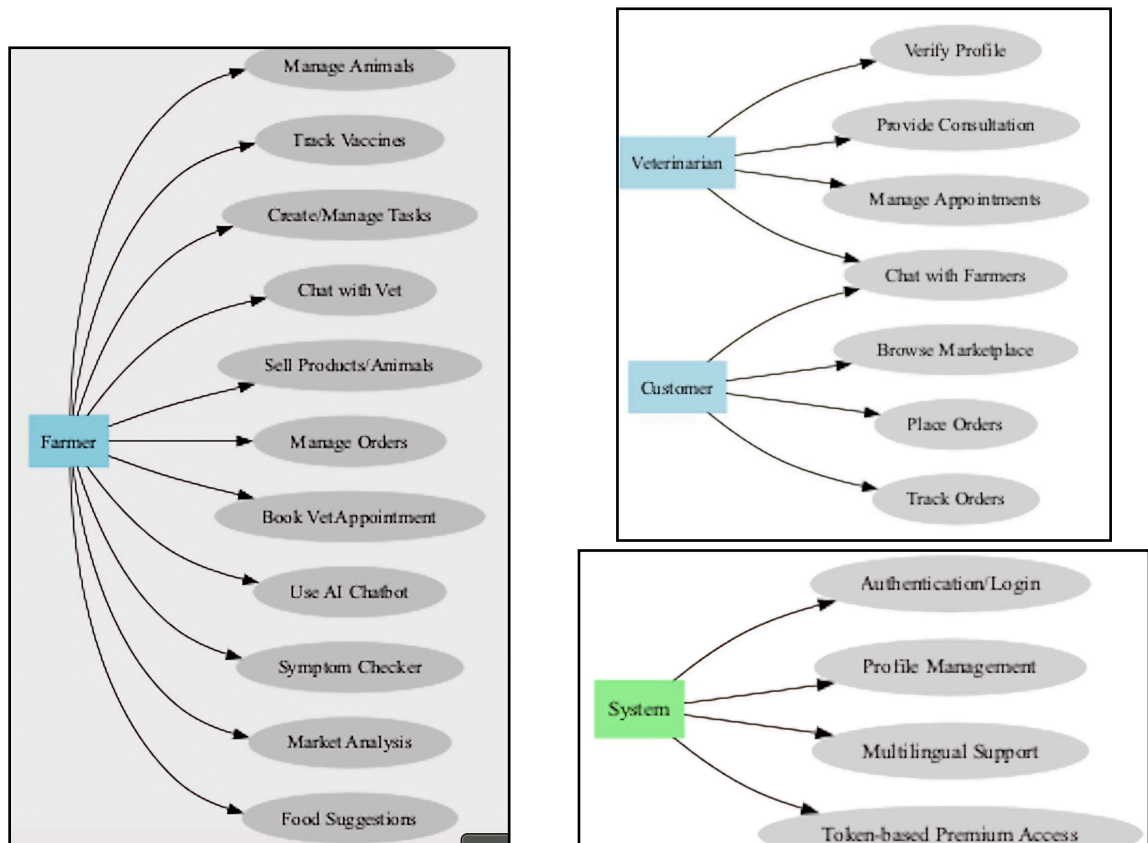


Figure: Use-cases of AgroLink

- Communication and chat features.
- Token-based premium feature access.

4. Features

Farmer Features

1. Authentication & Profile

Problem: Many farmers are not used to digital platforms, making data entry and profile management difficult.

Solution: AgroLink provides simple login, registration, and profile management with multi-language support, ensuring farmers can securely manage their data.

2. Dashboard

Problem: Farmers often rely on paper records or memory to track farm data, which leads to mistakes.

Solution: AgroLink's dashboard shows livestock count, token balance, location, and farm details in one place, making farm monitoring easier.

3. Animal Management

Problem: Tracking each animal's details like breed, age, health, and vaccination history on paper is inefficient.

Solution: With AgroLink, farmers can create a digital profile for each animal, including photos, health records, and vaccination history.

4. Task Management & Reminders

Problem: Farmers often forget vaccination dates, feeding times, or health checks, leading to missed care.

Solution: AgroLink's task management feature allows farmers to create reminders for feeding, vaccination, and other tasks, ensuring timely animal care.

5. Vaccine Management

Problem: Forgetting vaccination schedules can cause preventable diseases.

Solution: AgroLink keeps track of vaccine records and sends reminders for upcoming vaccinations, helping farmers protect livestock health.

6. Communication (Chat with Vets & Customers)

Problem: Farmers often struggle to find veterinarians quickly or connect with buyers.

Solution: AgroLink enables farmers to chat directly with vets for advice and with customers for product sales, bridging communication gaps.

7. Marketplace (Sell Animals & Products)

Problem: Farmers don't always get fair prices for their products in traditional markets.

Solution: AgroLink's marketplace lets farmers sell livestock and products like milk, eggs, and butter directly to customers, ensuring fairer pricing.

8. AI Chatbot

Problem: Farmers cannot always reach experts for small queries.

Solution: AgroLink's AI chatbot provides instant answers to farming questions, available in multiple languages including Bengali and English.

9. Symptom Checker & Pro Mode

Problem: Early signs of animal diseases often go unnoticed, leading to loss.

Solution: AgroLink's AI-powered symptom checker analyzes symptoms and gives possible diagnoses, while Pro Mode provides detailed analysis and generates professional reports.

10. Market Analysis

Problem: Farmers often don't know the right time to sell animals or products.

Solution: AgroLink provides price predictions, market analysis, and selling recommendations based on location and demand.

11. Food & Nutrition Suggestions

Problem: Many farmers don't know the right diet for their livestock, leading to higher costs and poor productivity.

Solution: AgroLink suggests cost-effective and balanced feeding plans to improve livestock health and reduce expenses.

12. Vet Locator

Problem: Finding nearby veterinarians in rural areas is difficult.

Solution: AgroLink shows nearby vets, their specialties, and contact details, making professional help more accessible.

13. Subscription & Token Management

Problem: Farmers may not afford costly premium subscriptions.

Solution: AgroLink uses a token system, allowing farmers to pay only for the premium features they need, making services more flexible and affordable.

Veterinarian Features

14. Authentication & Profile

Solution: Vets can register with license verification, set up specialties, and create professional profiles.

15. Dashboard

Solution: Vets can see appointments, messages, and key stats in one place, improving workflow.

16. Appointment Management

Solution: Vets can manage scheduling, accept/reject requests, and stay connected with farmers.

17. Messaging

Solution: Vets can chat directly with farmers, offering remote consultation and advice.

Customer Features

18. Authentication & Profile

Solution: Customers can easily register as individuals or businesses, set preferences, and manage their details.

19. Dashboard

Solution: Customers can access the marketplace and view their order history from one central hub.

20. Marketplace

Solution: Customers can browse available livestock and farm products, compare, and place orders online.

21. Order Management

Solution: Customers can track order status, reorder easily, and communicate with farmers directly.

22. Messaging

Solution: Customers can directly chat with farmers for product inquiries and negotiations.



Universal Features

23. Multi-language Support

Solution: Full English and Bengali support ensures accessibility for rural farmers.

24. Authentication & Security

Solution: Secure login, JWT authentication, and safe data storage protect farmer and customer information.

25. Premium Features (Token-based)

Solution: Token-based access allows farmers to use premium services like AI chatbot, symptom checker, food suggestions, and market analysis at low cost.

- AI Chatbot (1 token/use)
- Symptom Checker (2 tokens)
- Food Suggestions (2 tokens)
- Market Analysis (3 tokens)
- Pro Mode Diagnosis (1 token)

1.