



**AgriSense AI: Conversational Precision Agriculture for Pest Crop  
Health Management**

# Problem Statement

Pests are a major problem for farmers and can cause significant crop losses. They have a devastating effect on crops and livestock, leading to significant losses in yield and quality. First is direct injury done to the plant by the feeding insect, which eats leaves or burrows in stems, fruit, or roots.

The second type is indirect damage in which the insect itself does little or no harm but transmits a bacterial, viral, or fungal infection into a crop.



# Our Solution

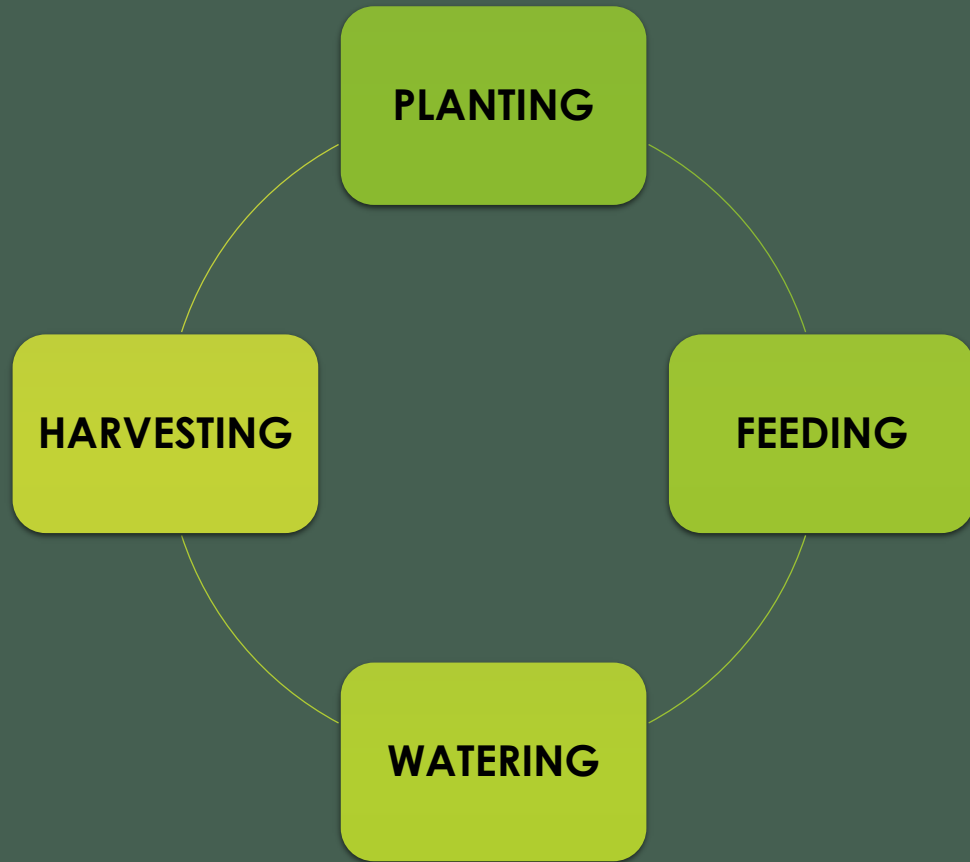
A conversational AI solution using IBM watsonx designed for precision agriculture. It detects crop pests, providing real-time insights to boost crop productivity, reduce waste, and support eco-friendly farming practices while optimizing yields, resource efficiency and reducing costs.



# Our Solution

Agriculture today faces critical challenges such as pest outbreaks. These issues lead to reduced productivity, resource wastage, and environmental impact. Farmers and agricultural businesses often struggle to access timely and actionable insights to address these challenges. This project leverages IBM watsonx to create an advanced conversational AI system tailored for precision agriculture. Farmers can interact with the system via a user-friendly interface, receiving instant insights, recommendations, and alerts on pest risks or irrigation needs. Targeted at smallholder farmers, agribusinesses, and agricultural consultants, the solution offers unique benefits such as predictive pest analytics, and seamless data integration. It empowers users to enhance crop health, reduce losses, optimize water use, and promote sustainable farming practices, ultimately driving agricultural innovation.

# TARGET MARKET



The target audience for this innovative solution includes farmers, agribusinesses, and agricultural extension workers, each benefiting uniquely from AI integration in the farming lifecycle.

There is vast infestation during all stages of the planting cycle. Our solution manages and provides benefits from pest control technologies that, reduce waste and protect the environment.

This system empowers the agricultural sector to embrace efficiency and sustainability seamlessly.

# MARKETING STRATEGY

## AWARENESS CAMPAIGN

- Social media
- Community outreach
- Partnerships with NGOs and environmental organizations
- Email marketing
- Word of mouth



# REVENUE STREAMS

- Subscription Plans:**

- Monthly or annual pricing tiers based on user type:

- Farmers:** \$5–\$10/month.

- Agribusinesses:** \$50–\$100/month.

- Discounts for NGOs or bulk purchases by government programs.

- Pay-Per-Use Model:**

- Charge for each pest identification instance (e.g., \$0.50/image).

- Enterprise Licensing:**

- Offer enterprise solutions for agribusinesses with customizable features and data analytics.

- Data Insights and Analytics:**

- Monetize aggregated and anonymized pest data trends for research institutions or policymakers.

# Total Addressable Market (TAM)

Target Market: Small-scale farmers, Agribusinesses, Agricultural Extension workers, Research institutions, Government and Non-Governmental Organizations (NGOs) around the globe.

REVENUE PER USER: 8,000 users

- Small-Scale Farmers: \$5/month = \$120,000/year
- Agribusinesses: \$50/month = \$1,200,000/year
- Agricultural Extension Workers: \$20/month = \$480,000/year
- Government and Non-Governmental Organizations (NGOs): \$30/user/month = \$720,000/year

TAM= \$720,000 + \$480,000 + \$1,200,000 + \$120,000 = \$2,520,000.

# Competitive Analysis

CRITERIA	Our Solution	Traditional Pest Control	High-End Precision Agriculture Systems
Technology	AI & ML-based pest classification	Manual observation & pesticides	Advanced IoT & AI integration
Ease of Use	User-friendly interface for all levels	Requires expertise in pesticides	High complexity (requires training)
Cost	Affordable subscription plans	High recurring pesticide costs	High initial investment

# SWOT ANALYSIS

STRENGTH	WEAKNESSES	OPPORTUNITY	THREAT
Sustainable solution	Initial Cost	High initial investments	Government incentives
Technological expertise	User Adoption	Technological advancement	Regulatory changes
Environmental impact	Internet dependency	Global Scalability	Economic factors
Strong partnerships	Device Compatibility	Environmental Focus	Public perception

# FUTURE PROJECTION

Phase 1: Target small-scale farmers and agricultural extension workers in key agricultural hubs within Nigeria while focusing on regions where pest-related crop losses are highest.

Projection: 5,000 users generating \$300,000 annually.

Phase 2: National adoption across Nigeria; reach 50,000 users and generate \$3,000,000 annually.

Phase 3: Regional adoption in Africa; 200,000 users with \$12,000,000 annual revenue.

Phase 4: Global expansion to Asia and Latin America; 1,000,000 users and \$60,000,000 annual revenue.



# Sustainability & Impact Potential

## Economic Impact:

Increase farmers' incomes by reducing crop losses (up to 30% reduction in pest-related losses).

## Social Impact:

Improve farmers' livelihoods by providing affordable, accessible pest management tools.

## Environmental Impact:

Lower carbon footprint by reducing pesticide use and promoting sustainable pest control.

## 1. Economic Sustainability:

1. Revenue Streams: Subscription-based pricing (monthly/annual), freemium model with premium features for larger organizations.
2. Grants & Funding: Partner with governments, NGOs, and global organizations promoting sustainable agriculture for initial grants.

## 2. Environmental Sustainability:

1. Pest Control Impact: Reduce overuse of pesticides by enabling targeted interventions, decreasing soil and water pollution.
2. Crop Yield: Prevent losses due to pest infestations, improving food security and reducing waste.



Tags: Artificial Intelligence, Precision Agriculture, Robotic Systems, Sustainable Farming, Pest Management, Soil Monitoring, Resource Optimization, Smart Farming, Environmental Sustainability

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