

UMA AI is a comprehensive digital assistant designed to modernize smallholder farming by bridging the "information gap" through artificial intelligence and localized intelligence. Primarily focused on farmers in Camiguin, the platform guides users through the entire crop lifecycle—from land preparation to market—ensuring accessibility through local dialects and offline functionality.

Problem Statement & Theory of Change

Most farmers in Camiguin currently rely on traditional observation and manual diagnosis, leading to wasted resources, soil degradation, and financial burden due to incorrect input application.

UMA AI's Theory of Change:

IF farmers are provided with intuitive, AI-powered tools that offer tailored recommendations in a language they understand...

THEN they can accurately detect early signs of disease and pest infestations independently...

THE RESULT WILL BE significantly reduced spending on agro-inputs, fewer crop losses, and improved financial resilience for farming families.

Core Value Proposition & Features

Accessibility: Full functionality in local languages/dialects (Tagalog, Cebuano, Ilocano) via a Natural Language Processing (NLP) layer that includes audio assistance for lower literacy rates.

Precision Diagnostics: AI-powered identification of pests and diseases using Computer Vision for real-time analysis of leaves, stems, or soil.

Multi-Tiered Recommendations: Users can toggle between Organic, Traditional, Biological, and Synthetic solutions based on their farming philosophy or budget.

Holistic Management: Integration of hyper-local weather alerts, simplified bookkeeping journals, and market price tracking.

Smart Farming Calendar: A dynamic, automated schedule covering everything from land preparation and procurement to harvest and post-harvest activities.

User Journey Comparison

Component	Current User Journey (Before App)	User Journey (Using UMA AI)
Trigger	Observation of a problem in the farm.	Observation of a problem in the farm.
Diagnosis	Inefficient/Inconsistent: Asking neighbors or buying treatments impulsively	Instant/Informed: Using Smart Lens (photo), Voice, or Chat to describe the issue.
Strategy	Applying fertilizers/pesticides without certainty of success	Selection from science-backed Organic, Traditional, Biological, or Synthetic options
Tracking	No official record of actions or dosages	Activity recorded in-app for future reference and financial analysis

Technical & Strategic Implementation

Offline-First Design: Core functions are ready for offline use, with AI models compressed via quantization to run locally on smartphones.

Marketing & Adoption: A "boots-on-the-ground" approach centered on the "Lead Farmer" Program, identifying influential farmers to drive adoption through peer trust.

Timeline: A phased rollout starting with Discovery (4 weeks) through to Deployment (App Store launch and community training).

Success Metrics (KPIs)

To track project success, UMA AI will monitor:

Yield Increase: Comparing harvest results of app users vs. non-users in the same region.

Diagnostic Accuracy: Feedback loops to confirm if AI recommendations effectively solved crop issues.

Engagement: Daily Active Users (DAU) frequency during planting seasons.