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AI for Bharat Hackathon

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Team Name : KrishiSaathi

Team Leader Name : N. Shashidhar Reddy

Problem Statement : [Professional Track] AI for Rural Innovation & Sustainable Systems

Brief about the Idea:

KrishiSaathi: AI-Powered Multi-Agent Agricultural Intelligence System

The Vision: A revolutionary system providing comprehensive assistance via 5 specialized AI agents working through Amazon Bedrock.

Core Pillars:

RAG-powered: Knowledge base of 50,000+ agricultural documents.

Voice-First: Supports 12 Indian languages for semi-literate accessibility.

Omnichannel: Available via Progressive Web App (PWA), WhatsApp, and SMS.

Connectivity: Offline-capable features for low-bandwidth rural areas.

How is it Different from Existing Ideas?

How will it solve the problem?

Expert Access: "Crop Doctor" provides instant disease diagnosis via image analysis (95%+ accuracy) using Amazon Rekognition.

Market Transparency: "Market Agent" tracks 2000+ mandis with 7-day price predictions.

Language Barrier: Voice interface in 12 languages (Hindi, Tamil, Telugu, etc.) using Amazon Transcribe and Polly.

Climate Risks: "Weather Prophet" offers village-level alerts and crop-specific advice.

Unique Selling Points

Multi-Agent Collaboration: 5 AI agents consult each other for best decisions. (e.g., Weather Agent warns Crop Doctor not to recommend spraying before rain).

Hyper-Personalized: Uses GPS and Soil Health Card data for field-specific advice rather than generic tips.

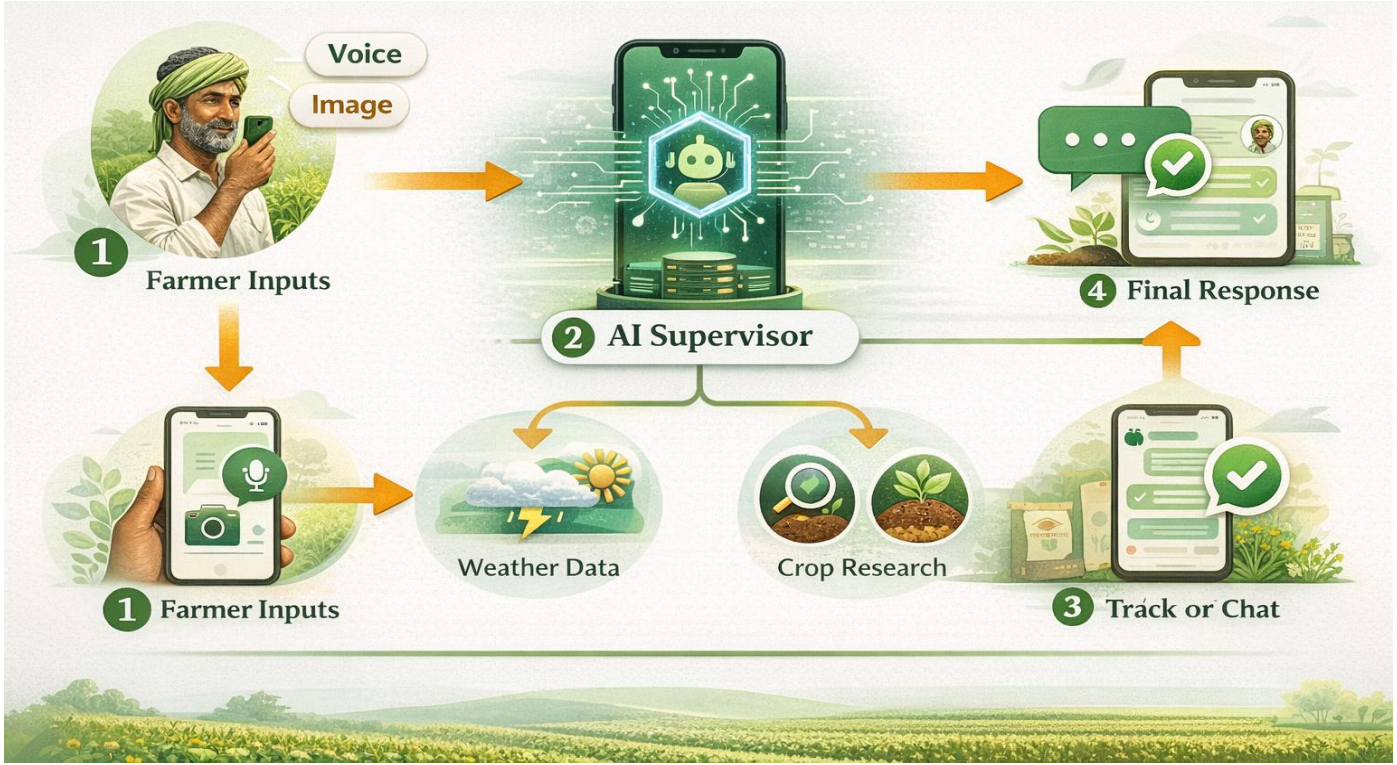
WhatsApp-Native: No complex app installs; works where farmers already are.

Offline-First RAG: Compressed knowledge base works without internet.

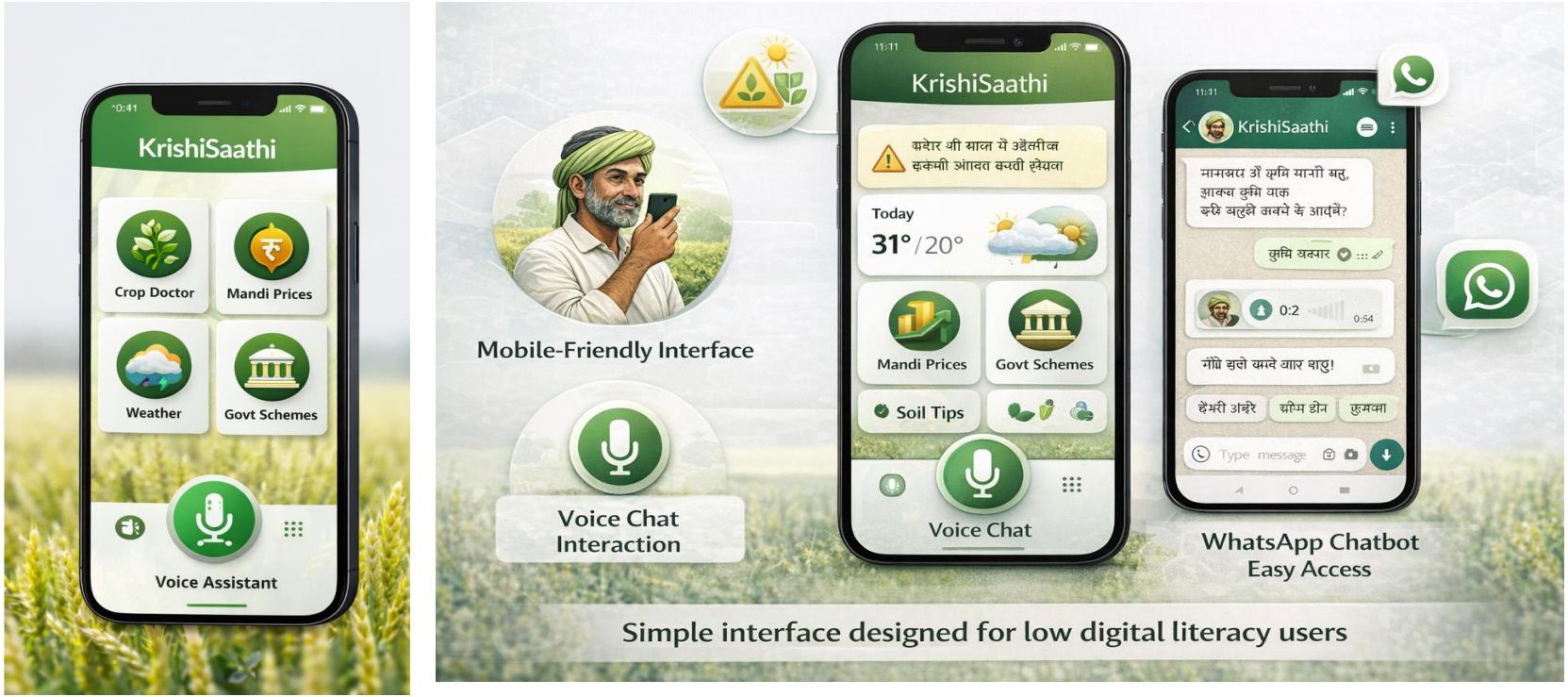
Community Learning Network: Learns from farmer queries to give regional alerts.

List of features offered by the solution

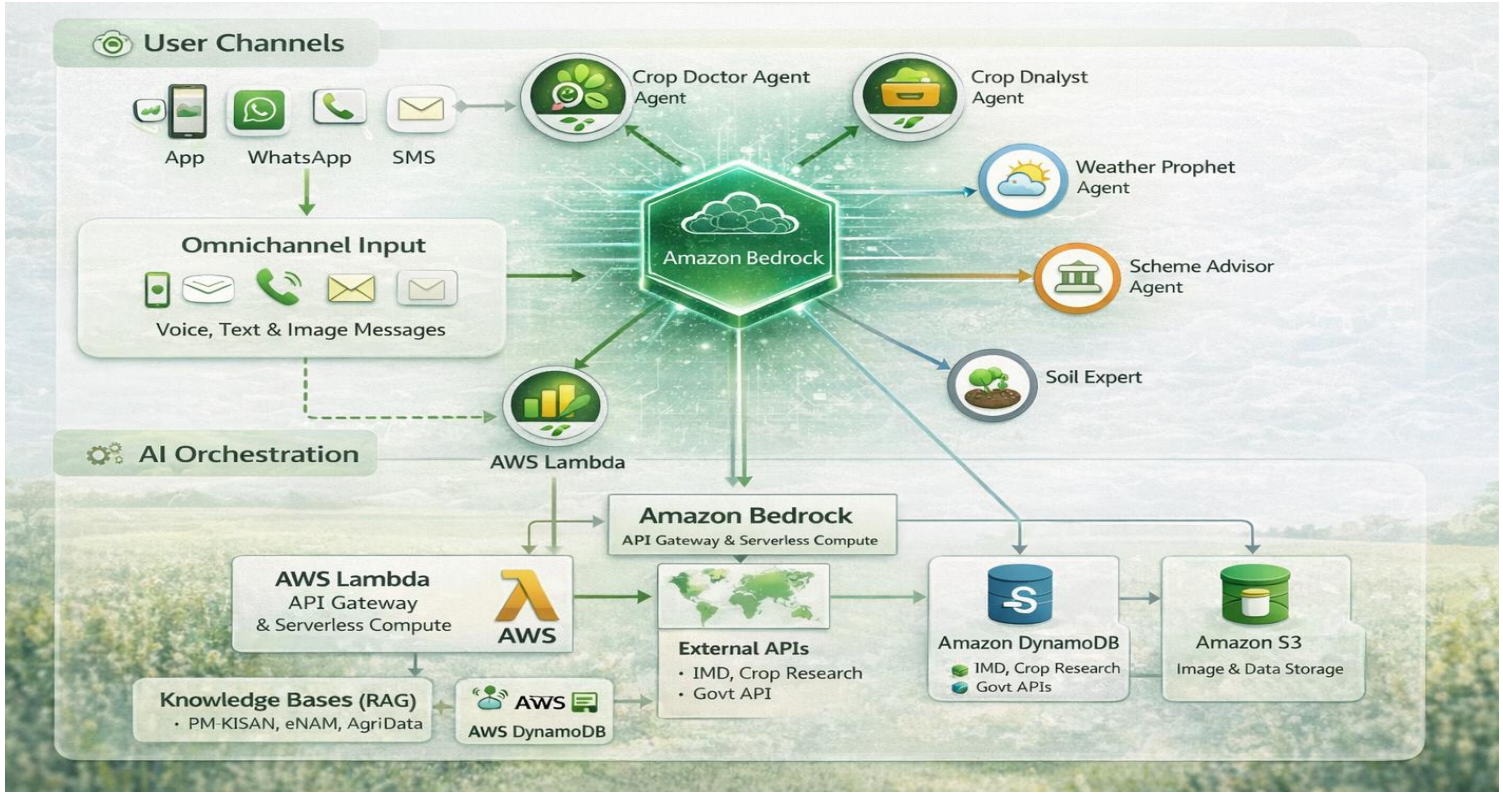
Process Flow Diagram



App Mockup – KrishiSaathi Interface



Architecture Diagram



Technologies to be used

AI/ML: Amazon Bedrock, claude 3.5 Sonnet, Rekognition,Translate, Guardrails, Transcribe

Database: Amazon OpenSearch Serverless (Vector Store) and DynamoDB (User Profiles), Amazon S3.

Messaging: SNS, Amazon Connect, WhatsApp Business API(via Twilio)

Backend: AWS Lambda , Amazon API Gateway and Amazon Cognito.

Frontend: React.js PWA with offline support, TailWind CSS

External APIs: eNAM(Mandi), IMD(weather), PM-KISAN(Schemes), Twilio

Estimated Cost & Impact

Implementation: < $100 for Hackathon POC; ~$790/month for 100,000 users.

Impact: Goal to reach 25 million farmers by Year 5, preventing billions in crop loss.

SDG Alignment: Supports SDG 1 (No Poverty), SDG 2 (Zero Hunger), and SDG 13 (Climate Action).

Conclusion

Why KrishiSaathi Wins: It directly addresses the "AI for Rural Innovation" track by bridging the digital divide with voice-first technology.

AWS Native Strength: The entire system is built to scale on a serverless architecture using Amazon Bedrock and Lambda.

Measurable Results: Our goal is to increase farmer income by 30-40% through market transparency and disease prevention.

Scalability: Regional scaling ensures that the intelligence is hyper-local, whether a farmer is in Punjab or Tamil Nadu.


Empowering 150 Million Indian Farmers
with the Power of AI
KrishiSaathi
Mandi Prices
Govt Schemes
Voice Chat

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Thank You