



# WHEN THE WORLD IS YOUR CLIENT

Infosys Global Hackathon

Team name: Gojo

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Problem Statement: Challenge 7 – AgriGuru: Intelligent Agricultural  
Advisory System



# Problem Statement

- **Lack of Timely Information:** Farmers struggle with accessing real-time, location-specific data on crops, weather, and prices, affecting decisions and yields.
- **Need for Personalization:** One-size-fits-all recommendations are ineffective; personalized insights are crucial for effective farming decisions.
- **Integration of Technologies:** The solution requires combining AI, satellite data, and **local sensors** to deliver accurate and actionable advice.
- **Focus Areas:**
  - Crop selection recommendations
  - Weather forecasting
  - Market trend analysis
  - Sustainable farming practices
- **Broader Vision:** Empower farmers with intelligent tools to increase yield, reduce costs, and boost income, contributing to SDG 2: Zero Hunger.

# Solution approach

How will it be able to solve the problem?

- **AI Crop Recommender:** Suggests best-suited crops based on soil and climate.
- **Weather & Yield Forecasting:** Enables timely sowing, irrigation, and harvesting.
- **Predictive Price Analytics:** Helps plan sales with future market trends.
- **Disease Detection App:** Diagnoses crop diseases via images for quick action.
- **Voice Chatbot Advisor:** Offers localized, easy-to-understand audio support.
- **Smart Subsidy Matcher:** Simplifies access to relevant schemes.
- **Agronomy Knowledge Graph:** Integrates data for precise recommendations.
- **Policy Updates Feed:** Notifies farmers about new rules & compliance needs.
- **Farm Collaboration:** Encourages peer learning and experience sharing.
- **Digital Record-Keeping:** Tracks activities for compliance & certification.

# USP of the proposed solution

- **AI-Powered Personalization:** Tailored advice per farm, crop, and season.
- **Multilingual Voice Support:** Audio chatbot breaks language and literacy barriers.
- **Market-Driven Insights:** Business-focused decisions via price & policy trends.
- **Effortless Compliance:** Auto-logs reduce paperwork and aid eligibility.
- **Community Learning:** Peer exchange boosts collective farming knowledge.

# Technical outline

- **AI & Machine Learning:** TensorFlow, PyTorch
- **Natural Language Processing:** Hugging Face Transformers, Dialogflow
- **Computer Vision:** YOLO, EfficientNet
- **Geospatial & Satellite Data:** Google Earth Engine, Sentinel Hub
- **Mobile & Web Development:** React Native, Flutter, Angular
- **Cloud Infrastructure:** GCP
- **Databases & Spatial Data:** PostgreSQL with PostGIS, GeoServer
- **Authentication & Security:** OAuth2, Firebase Auth
- **Notifications:** Firebase Cloud Messaging, Twilio

# Technical outline

## Features of USP of the proposed solution

- AI Crop Suitability Recommender – Data-driven crop selection based on local conditions
- Yield & Weather Forecasting Engine – Supports timely agronomic decisions
- Predictive Price Analytics – Helps plan sales based on future market trends
- Disease Image Recognition App – Early disease detection via photos
- Natural Language Audio Chatbot Advisor – Multilingual voice assistance for inclusivity
- Regional Agronomy Knowledge Graph – Centralizes best practices and local insights
- Localized Policy Updates Feed – Provides real-time compliance alerts
- Farm Collaboration Platform – Encourages peer learning and knowledge exchange
- Automated Record-Keeping & Compliance Logs – Simplifies documentation for subsidies and certifications

# Technical outline

## USP of the proposed solution

- AI-Driven Personalization – Tailors advice to each farm's location, crop, and history
- Voice-Enabled Multilingual Access – Accessible to farmers regardless of literacy
- Actionable Market Intelligence – Empowers strategic sales planning through forecasting
- Seamless Compliance and Subsidy Access – Eases paperwork and improves eligibility
- Community Collaboration – Facilitates learning and collective growth through farmer networks

# Novelty of our solution

## Opportunities:

- **Market Adoption Potential** – Large untapped base of farmers in developing regions with limited access to AI-based advisory tools
- **Government Partnerships** – Scope for integration with ministries and rural programs for schemes, subsidies, and certifications
- **Data Monetization** – Anonymized data can serve research bodies, agri-input firms, and insurers
- **Integration with Financial Services** – Enables customized credit and insurance products based on farm performance
- **Scalability** – Cloud-native design allows rapid expansion across geographies without heavy physical infrastructure
- **Sustainability Goals Alignment** – Directly contributes to SDG2 (Zero Hunger) by enhancing productivity and resilience



# Novelty of our solution

How different is it from any of the other existing ideas?

- **Holistic Scope** – Unlike others focusing on one problem, this platform covers the entire crop lifecycle in one integrated system
- **AI-Powered Personalization** – Offers farm-specific insights based on historical, geospatial, and real-time data
- **Voice-Enabled, Multilingual Chatbot** – Goes beyond text-based apps to support semi-literate and illiterate users
- **Predictive Market Intelligence** – Forecasts future price trends, unlike typical tools that show only historical data
- **Smart Subsidy and Grant Matching** – Identifies eligible schemes and simplifies application processes
- **Seamless Compliance and Record-Keeping** – Helps farmers manage documentation and certifications digitally
- **Community Collaboration** – Fosters peer learning and cooperative networks, a gap in many standalone tools