SmartKrishi 2025 - Idea Submission

# Problem Statement:

Digital Krishi Assistants (AI/ML-based Advisory Systems)

# 1. Problem Understanding

Farmers often lack real-time, reliable, and personalized advisory support for crop management. They face difficulties in identifying crop diseases, deciding irrigation schedules, choosing fertilizers, and accessing market price trends. Current solutions are either generic or not accessible in local languages.

# 2. Proposed Solution

We propose a Digital Krishi Assistant powered by AI/ML that provides personalized crop advisory services. It will work as a mobile/web app and also support voice interaction in regional languages. Features include:  
- Disease and pest detection through AI-based image recognition  
- Weather-based irrigation scheduling  
- Fertilizer and pesticide recommendations  
- Market intelligence and price prediction  
- Community Q&A platform for farmers

# 3. Technology & Implementation

- Frontend: React Native / Web App  
- Backend: Node.js / Python Flask  
- Database: MongoDB / Firebase  
- AI Models: CNN for disease detection, ML regression for weather prediction, recommendation engine  
- IoT Integration: Soil moisture sensors, weather stations  
- Local Language Voice Assistant (using Google Speech-to-Text and TTS APIs)

# 4. Impact

- Increase in crop yield  
- Reduction in costs of fertilizers and pesticides  
- Water conservation through precision irrigation  
- Empowerment of small-scale farmers with accessible AI technology  
- Boost to sustainable agriculture

# 5. Uniqueness & Scalability

- Affordable and farmer-friendly solution  
- Works offline with periodic sync  
- Local language support for inclusivity  
- Easily scalable to different crops and regions across India