

PROBLEM STATEMENT

Agriculture faces challenges like changing weather, limited seed knowledge, no data-driven crop calendar, low tech adoption, and tech awareness gaps. Farmers need an integrated solution to thrive in this evolving landscape.

SOLUTION

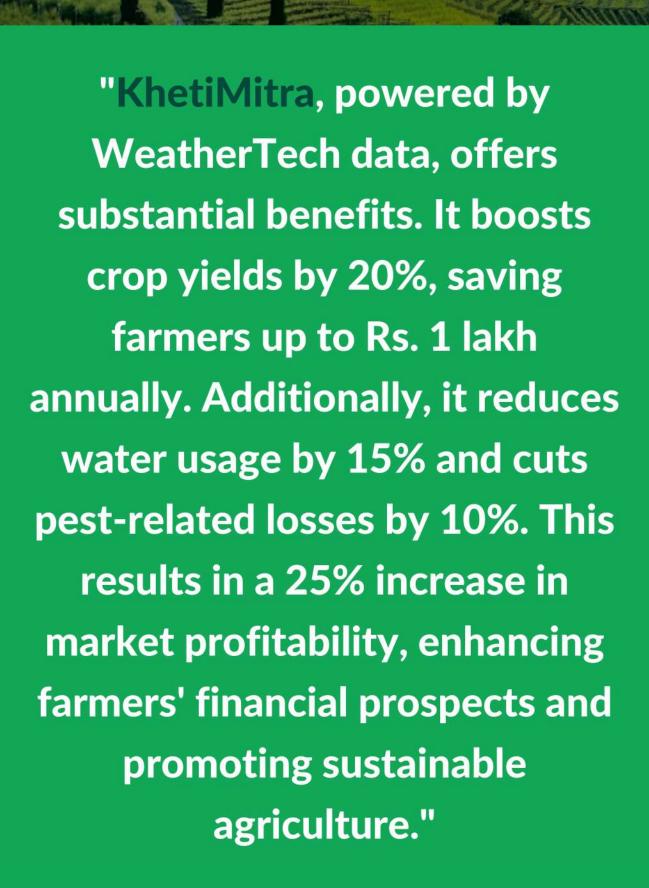
"KhetiMitra" is a comprehensive solution that integrates realtime data, Al-driven insights, and user-friendly platforms to empower farmers. It effectively addresses challenges posed by shifting weather patterns, limited seed knowledge, and low tech adoption, fostering sustainability and resilience in agriculture.



Solution Overview

- "KhetiMitra" empowers farmers with modern technology.
- Real-time data, Al insights, user-friendly platforms.
- Addresses weather challenges, seed knowledge gaps, and tech adoption.
- Promotes sustainability and resilience in agriculture.
- Fosters informed decisionmaking for farmers.





Proposition Proposition

- Weather & Soil Insights
- Al Crop Recommendations
- Market Price Predictions
- Pest & Disease Alerts
- Tech Adoption Guidance
- Al-Powered Crop Calendar
- Crop-specific SOPs for Maximum Yield

Flowchart of the Al Model

Utilizing AI and Machine Learning Models - SVM, Random Forest, Decision Tree



Intakes the IRSO Agriculture and soil Dataset with other parameters like weather etc.



Processing and cleaning of the dataset & integration of tokenization technique



Model training and testing using K-Fold and optimizing it with key factors

calculating insights & merging all conditions of soil, weather, location, water



Developing optimal planting schedules, estimated costs, profit forecasts

Real-time weather updates as mobile notification, key dates &precise irrigation



Supply and demand insights for agribusinesses and startups

Recommendation about the new IoT techs and awareness of government policies



Integration of Crop storage sense and portal for manufacturers & retailers

Feasiblility

- Data Partnerships: Collaborate with data providers for real-time data.
- Al Model Development: Create A models for recommendations.
- User-Friendly Platforms: Develop intuitive mobile and web tools.
- Training Programs: Offer comprehensive user training.
- Accessibility Focus: Ensure inclusivity for all farmers.





Uniqueness

- 1. Weather-Adaptive Planning: Real-time weather insights for adaptive farming.
- 2. Al Precision Farming: Al-driven precision in crop management.
- 3. **Tailored SOPs:** Customized Standard Operating Procedures for optimal yields.
- 4. **Localized Recommendations**: Region-specific crop advice.
- 5. **Multi-Lingual Access:** Inclusivity for diverse farming communities.
- 6. **Real-time Insights**: Immediate access to critical data.
- 7. **Eco-Friendly Practices:** Promotes sustainable farming.
- 8. **Dynamic Learning**: Al adapts to evolving conditions.



KhetiMitra's impact is multifaceted, contributing significantly to sustainability. Environmentally, it optimizes resource use, reducing the ecological footprint of agriculture. Socially, it enhances food security and empowers farming communities with knowledge. Economically, it fosters growth in the agricultural sector, strengthening the foundation of economic sustainability. KhetiMitra aligns seamlessly with the overarching theme of the hackathon, offering a holistic solution that propels agriculture into a more sustainable and prosperous future.

Impact and Sustainability

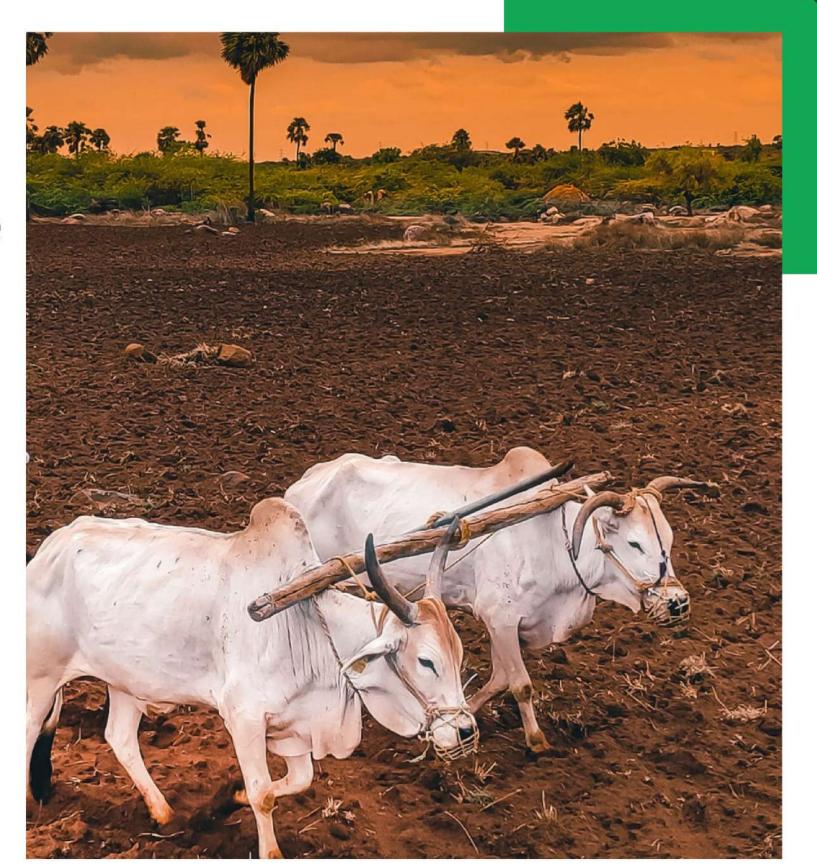
Environmental: KhetiMitra enhances crop yield efficiency, reducing the environmental footprint by optimizing resource use.

Social: Improved food security and knowledge empowerment uplift communities, aligning with social sustainability goals.

Economic: Economic growth in agriculture fosters financial sustainability among farmers.

Environmental Benefits

- Reduced Resource Consumption:
 KhetiMitra reduces water and pesticide usage, promoting resource efficiency.
- Minimal Chemical Usage: By providing targeted insights, it minimizes chemical application, benefiting the environment.
- Lower Carbon Footprint:
 Sustainable practices lead to a reduced carbon footprint, supporting environmental conservation.



E M



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