SMART INDIA HACKATHON 2025



- Problem Statement ID 25010
- Problem Statement Title- Smart Crop Advisory

System for Small and Marginal Farmers

- Theme- Agriculture, FoodTech & Rural Development
- PS Category- Software (Application)
- Team Name- Glitch Hunters
- **Team Members-** Jiya Bhati, Suvi Tiwary, Adarsh Pandey, Yash Verma, Ashit Upadhyay, Abhishek Mishra



krishiSetu - Smart Crop Advisory System



"Imagine standing in your field, wondering: Should I water today? Which seed will thrive? What if tomorrow brings heavy rain?"

KrishiSetu isn't just an app—it's a **digital farming companion**. Multilingual, voice-first, always-on, and hyper-local.

- ☐ A farmer asks in her own dialect: "What crop should I sow this season?"
 → KrishiSetu replies with soil-tested, weather-aligned, market-aware advice.
- She uploads a photo of a diseased leaf → AI detects the pest in seconds, prescribes eco-friendly treatment.
- ☐ A sudden rainfall alert arrives → She adjusts irrigation, saving water and money.
- Her **crop calendar** reminds her when to sow, irrigate, and harvest—synced with local weather.
- ☐ At harvest, KrishiSetu shows nearest storage centers and best mandi prices → reducing losses, boosting income.

"Next, let's open the hood—how KrishiSetu brings AI, IoT, and human feedback together into one seamless system.

The Core Benefits (3 pillars)

Confidence – No more uncertainty.

Every action is backed by data.

Simplicity – Talk, tap, or snap. Advice comes in plain language, instantly.

Empowerment – From soil to market, farmers control their journey.

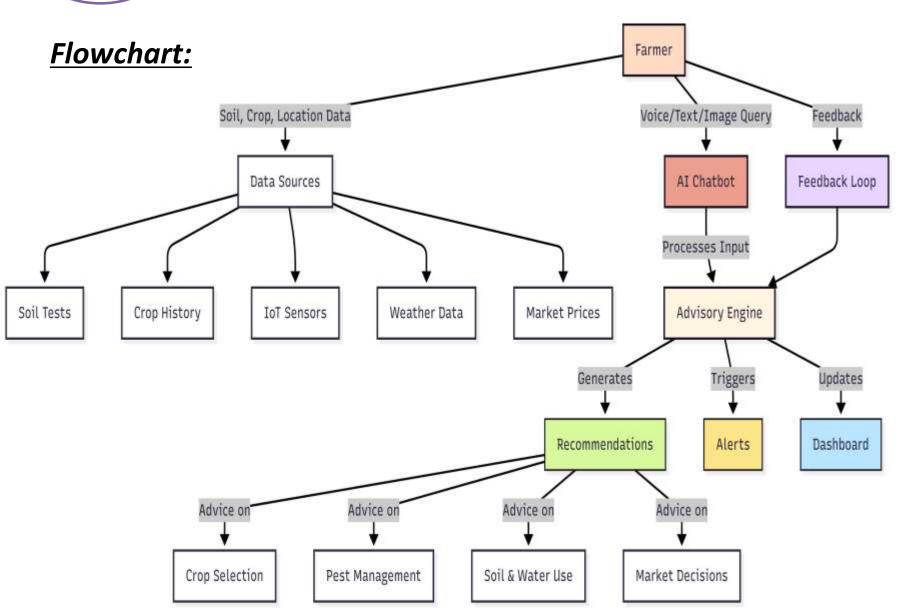
What's Different:

Unlike static advisories,
KrishiSetu learns and evolves
with each farm, each plot, each
season. Built for rural realities—
voice-first, multilingual, offlineready.



TECHNICAL APPROACH





Tech Stack:





FEASIBILITY AND VIABILITY



Feasibility & Viability

- 1. Technical: Built on proven AI/ML + scalable cloud.
- Operational: Farmers already use WhatsApp/voice apps
 → easy adoption.
- **3. Economic:** Affordable via low-cost smartphones & govt. schemes.

Challenges & Risks

- i. Digital literacy gaps
- ii. Weak rural connectivity
- iii. Al errors may reduce trust
- iv. Data privacy concerns

Smart Strategies

- a) Voice-first + local languages → break literacy barrier
- b) Offline & lightweight → works even with poor internet
- c) Expert validation → ensures AI accuracy
- d) Secure data policies → protect farmer trust

Result: Technically sound, socially impactful, and economically scalable with the right safeguards.



IMPACT AND BENEFITS



Potential Impact on Target Audience

- Empowers **small & marginal farmers** with real-time, personalized decisions.
- Reduces dependence on middlemen & unreliable advice.
- •Builds farmer confidence → stronger adoption of modern agri-tech.

F KrishiSetu improves farmer livelihoods while driving sustainable, tech-enabled agriculture.

Benefits of the Solution

Social

- Multilingual + voice-first → accessible for all farmers.
- Builds stronger, informed rural communities.

S Economic

- 20–30% higher yields.
- Lower costs via smart fertilizer & water use.
- Better mandi prices → fair income.

T Environmental

- Less chemical use → healthier soil & crops.
- Smart irrigation → saves water.
- Promotes sustainable farming.



RESEARCH AND REFERENCES -



Data Sources:

- Weather & Oceanographic Data → Argo Program
 (ArgoDataMGT, Coriolis)
- Soil Health Data → Soil Health Card Scheme, SoilGrids, field lab reports.
- Crop & Pest/Disease Data → ICAR, FAO, PlantVillage dataset, annotated farmer images.
- Market Price Data → Agmarknet, e-NAM, mandi boards
- Govt Schemes & Advisory → PM-KISAN, PMFBY, KCC, NABARD reports.
- Farmer Productivity Challenges → NABARD, "Low Productivity of Small & Marginal Farmers in India" reportLow Productivity of Small.

Insights from Research:

- 1. 86% of farmers are small/marginal, with fragmented land & low tech access.
- 2. Major gaps: real-time weather, pest alerts, storage, market awareness.
- 3. ICT-based advisory can increase yields by **20–30%**.