

# 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, offline-ready**.





# FEASIBILITY AND VIABILITY



## Feasibility & Viability

1. **Technical:** Built on proven AI/ML + scalable cloud.
2. **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. AI 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.***

## 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.

☞ ***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.



### Economic

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



### Environmental

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

## 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%**.