



HackOrbit 2025

F22-Raptors

Theme: Artificial Intelligence and Machine Learning

Problem Statement:

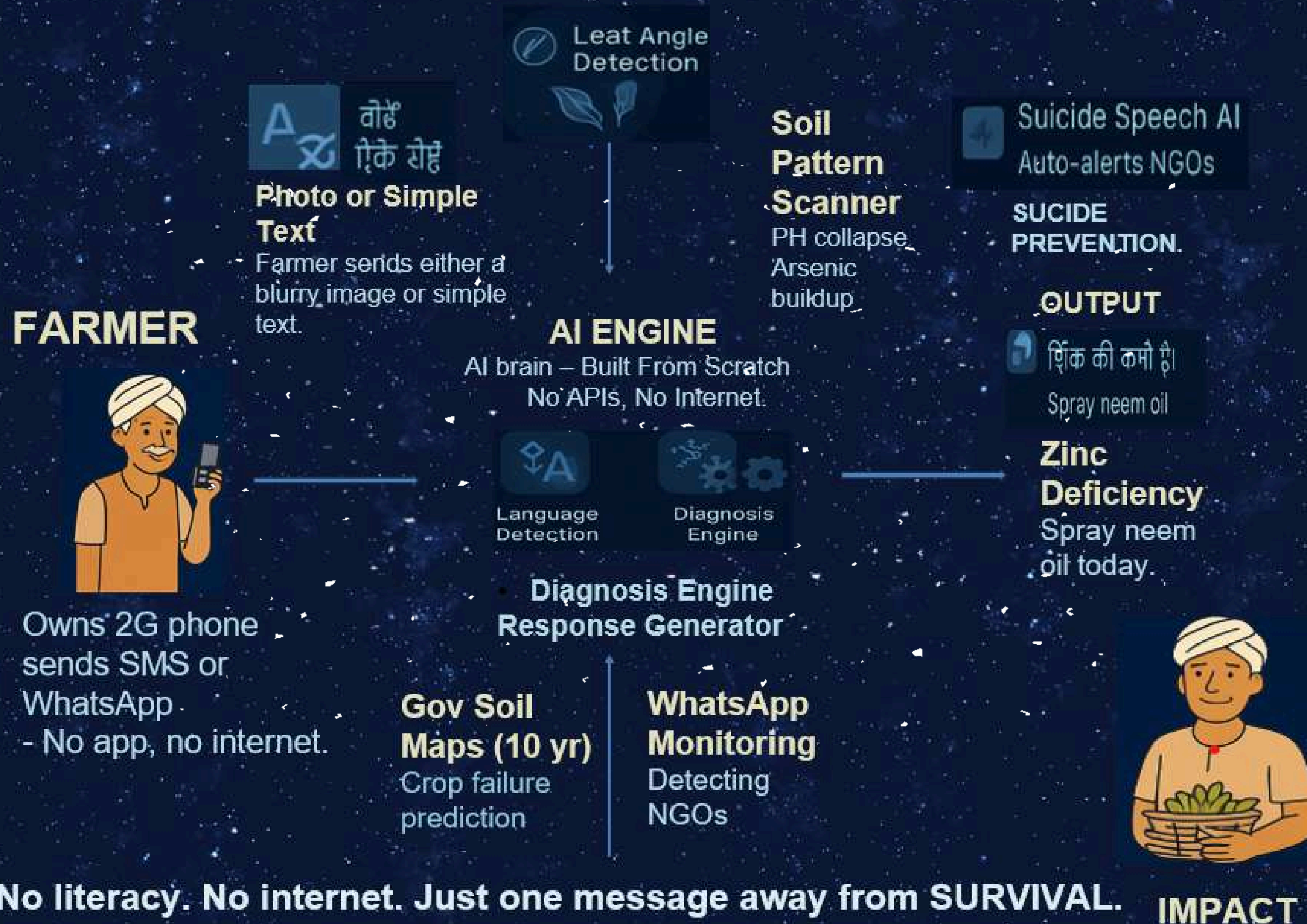
- **1 farmer dies** by suicide every 41 minutes in India.
- Cause?:
 1. **Sudden crop failure** - No Warning.
 2. **No fix** in time.
- Current tools are **late, unreliable**, or **need smartphones**.
- There's no **AI that works on 2G to stop collapse before it begins**.
- **Farmers aren't lazy. They're helpless and neglected.**

PROPOSED SOLUTION

AI That **Stops Farmer Suicides** by Predicting Crop Collapse before it begins.

- 📷 **Crop Autopsy AI** – Detects **pests, soil issues**, and **drought** signs from **WhatsApp images (2G-friendly)**
- 🧠 **Distress Signal AI** – Flags **suicidal signals** in farmer group chats using **keyword + sentiment detection**, and **alerts NGOs** instantly.
- 🔮 **Future Vision AI** – Predicts **collapse zones 90 days early** using soil, pesticide, and groundwater trends.

FLOWCHART / DIAGRAM



Flow chart/Diagram explanation

- farmer sends a blurry image or message via WhatsApp using a **2g phone**
- Our AI Engine analyzes it using:
 - 1.Crop **Autopsy AI** for **pests, soil issues, drought**
 - 2.Suicide **Speech AI** for **distress messages**
 - 3.Future **Vision AI** to predict **collapse zones**
- The system sends instant **fixes** or **NGO alerts** — **no app, no internet, no literacy required.**
- Just one message can prevent a **suicide.**

FEATURES AND NOVELTY

- **Works on 2G phones** – Farmers use WhatsApp, **no app or internet needed**
- **Diagnoses crop failure from photos** – Even **low-quality images are enough**
- **Detects distress in messages** – Flags **suicide risk** in farmer group chats
- **Predicts disasters before they even happen** – Simulated AI forecasts **collapse zones**
- **No existing solution combines all 3 AI's** – **Image + text + forecast in one system**
- **Built for real farmers, not dashboards** – Designed with **empathy, not tech buzzwords**

DRAWBACK AND SHOWSTOPPERS

- **Low-quality 2G images reduce AI accuracy**
 - Trained on blurred samples to **increase accuracy**
- **Suicide detection may flag false positives**
 - Alerts go to NGOs only after **human review**
- **Hard to access real rural data**
 - Using mock data now. We are planning to scale it with **government data and NGO'S**

BUSINESS & REVENUE MODEL

- 100% free for farmers
- Govt/state agencies pay-per-alert (₹1–5 per SMS)
- NGOs subscribe to AI dashboards
- **Impact Bonds**: Monetize via suicide prevention success metrics
- **Long-term: Carbon credits** for AI-led crop resilience

Tech Stack

Frontend: React.js + Tailwind CSS (for WhatsApp-style demo UI)

Backend: FastAPI (Python) – connects frontend to AI logic

Crop AI: TensorFlow (image classification, blurred samples)

Distress AI: TextBlob + keyword detection (sentiment & suicide signals)

Forecast AI: Rule-based prediction engine using soil and climate indicators

Hosting: Vercel (frontend) + Railway (backend)

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Thank you