Extra additions
Soil & Fertilizer Advisory
Input: soil test data (pH, NPK).
Output: "Apply 20kg urea per acre" type advice.
Dataset: ICAR soil & fertilizer guidelines (govt docs).

Weather-based Alerts
Integrate simple weather API (OpenWeather, IMD).
Advisory: "Rain expected tomorrow, avoid irrigation today."

Market Price Tracking
Scrape or mock mandi prices (Agmarknet API, FPO data).
Show farmer: "Sell at X mandi, price is ₹1800/quintal."

Multilingual Chatbot → Advisory Bot
Instead of just "explaining stress," it should answer:
"Which crop should I sow now?"
"What fertilizer should I use?"
"Will it rain tomorrow?"
"What's the price of wheat in mandi X?"

Final Idea(output should be farmer friendly like simple report(+ english and hindi ,Punjabi for every text)

A **web-based AI platform** where farmers (or NGOs/agronomists) can:

1. **Mark farm polygon** on a map.
2. **Upload images** (satellite/drone/phone) + add voice/text about their farming activity.
3. Platform uses:
   Spectral indices (NDVI, NDWI, etc.) for vegetation and water stress.
   CNN models to detect spatial stress/disease from images.
   LSTM models to predict temporal pest/water risk from trends & sensors.
   AWD (Alternate Wetting & Drying) logic to check irrigation practice → compute **water saved + methane reduced**.

   Soil & Fertilizer Advisory
   Input: soil NPK/pH (manual input or sample data).
   Output: fertilizer dosage & soil health recommendation.
   Weather-Based Advisory
   Rain, irrigation scheduling, pest risk alerts.

Market Price Advisory
Suggest best mandi for selling crop, based on price data.

4. System estimates **Carbon Credits** from methane reduction.
5. Farmer receives a **report & dashboard** showing:
Crop Health Map (NDVI heatmap).
Stress & Pest Risk Prediction (graphs & alerts).
Water Saving & GHG Reduction (if AWD followed).
Estimated Carbon Credits.
Fertilizer Recommendation (based on soil).
Weather Alerts (rain/temperature-based).
Market Price Widget (mandi rates).
6. Chatbot((Bilingual, Voice + Text)

For eg Farmers can ask:

"Is my crop healthy?"
"How much fertilizer to use?"
"Will it rain tomorrow?"
How many carbon credits did I earn?"

MVP

Farm Mapping:
Farmer selects/draws farm polygon (React + Leaflet).
Demo farm preloaded for hackathon.

Data Input:
Upload 1–2 sample farm images.
Input farming practice via voice-to-text

AI Processing:
NDVI/NDWI calculation (Python/Matlab).
CNN: classify crop patch as Healthy vs. Stressed.
LSTM: predict risk score from time-series data (demo dataset).
AWD Logic: detect if AWD followed → calculate water saved + methane reduced.

Carbon Credit Estimation

Dashboard & Report:
Map view with stress overlay.(Heatmap type)
Graphs: NDVI trend, risk prediction.
Carbon Credit widget.
Downloadable PDF report (with metrics + farmer transcript).

Dataset required

Check all the dataset provided in the PS
Then prepare a doc for that

+ Farm Boundary Data-> GeoJSON or shapefile
Satellite / Hyperspectral Data-> Sentinel-2 (Copernicus OpenHub, Google Earth Engine)
Farm Images (Kaggle: *PlantVillage*)
Time-Series Crop Index Data(FAO, MODIS NDVI dataset (free on Earthdata).
Emission Factors / Carbon Credit Data
Soil & Fertilizer Data
Use: Generate advisory on fertilizer dosage & soil health.
Sources:
ICAR guidelines on soil fertility & crop-wise NPK recommendations.
Public soil test data (e.g., NBSSLUP, SoilGrids).

Aman- AI/ML
Core models (CNN for stress, LSTM for risk prediction).
AWD logic integration with voice input.
Carbon credit calculation backend function.
Fertilizer Recommendation (based on soil)
Coordinate integration between frontend & backend.
Dependent: Needs datasets
Independent: Model coding.

Yatin- AI/ML
build a chatbot widget in React that can talk to farmers (text + voice). It should connect to our
backend API to fetch NDVI, stress % and carbon credits, and explain them in simple
Hindi/English. Also, add some FAQs about AWD, water saving, and carbon credits
Chatbot must answer advisory queries, not just explain outputs
Independent: NDVI/NDWI script.
Dependent: Needs sample datasets.

Pratham – Frontend

React + Leaflet → Farm polygon drawing, upload images.
Map overlay of stress (heatmap).
Charts for NDVI trend & risk score.

New Widgets to add: Soil card (show NPK + fertilizer advice), Weather card (forecast + suggested action), Market price card (current price + best mandi suggestion)

PDF report download button (connects backend).
Independent: UI screens, map integration.
Dependent: Needs backend APIs.

Rakshit – Backend

Django/Flask API setup.
Routes: `/upload`, `/polygon`, `/analysis`, `/report`.
Handle file/image uploads.
Connect AI models to frontend.

Integrate weather API + market price API
Independent: Setup backend skeleton.
Dependent: Needs ML scripts from Aman

Tuhin – Data + PPT

Collect given datasets.
Clean and preprocess into ready CSV/image folders.

Work on NDVI/NDWI calculation script
Build PPT slides: Problem, Approach, Data Flow, AI logic.
Help record demo video narration.

Mehak – Data + PPT

Support in dataset curation (hyperspectral + emission factors).
Create charts/graphs for PPT (NDVI sample trends).
Draft report template for farmer output.
Demo Video.

https://www.canva.com/design/DAGy1D3gPoA/EdLv0S25__Fk0c5NqgOzGg/edit?utm_content=DAGy1D3gPoA&utm_campaign=designshare&utm_medium=link2&utm_source=sharebutton

Ppt link