### **Problem Background: Agricultural Distress & Farmer Protests**

India's farmers are facing major challenges:

- Low and unstable crop prices (demand for Minimum Support Price MSP guarantee)
- **Debt traps**, lack of insurance, and poor access to government schemes
- Climate impacts (droughts, floods) and inadequate forecasting
- Misinformation about market rates and subsidies

These problems have led to farmer protests and growing economic distress in rural areas.



Project Title: AgroConnect – Farmer Support and Market Linkage Platform

### **Tech Stack**

#### Layer Technology

Frontend React.js, Bootstrap/Tailwind

Backend Java (Spring Boot) or ASP.NET Core

Database MySQL/MongoDB

APIs OpenWeatherMap API, Agri Market API (Govt.)

Hosting AWS / Azure / Render

Languages Multi-language support (Hindi, Marathi, etc.)

#### **User Roles**

- 1. Farmer
- 2. Market Agents / Buyers
- 3. Admin
- 4. Government Officials (optional)

#### **Core Modules**

#### 1. Farmer Registration & Profile

- Register with mobile number and Aadhaar (optional)
- Choose crops grown, farm size, region, etc.
- Select preferred language (localization)

#### 2. Live Market Prices

- Pull **real-time market rates** (mandi prices) via government APIs
- Show prices by crop and location
- Alert farmers when prices fall or spike

## 3. Crop Sale & Buyer Interaction

- Farmers list crops available for sale
- Local buyers/agents can place orders or bids
- Messaging or phone contact between farmer and buyer

## 4. Weather Alerts & Crop Advice

- Real-time weather forecasts (rain, drought alerts)
- Tips on crop protection, fertilizers, irrigation schedules
- Al-based advice based on crop type and season (optional)

#### **5. Government Scheme Awareness**

- List of available **government schemes** (PM-Kisan, insurance, loan waivers)
- Application status tracking
- Guide on how to apply

## 6. Loan Calculator & Subsidy Checker

- Estimate subsidy eligibility
- EMI calculator for agri-loans
- Alerts on loan deadlines

# 7. Admin Dashboard

- View user activity (farmers, buyers)
- Manage reported buyers/sellers
- Upload news updates or schemes

## Database Schema (Sample Tables)

- Users (id, name, role, location, language)
- Crops (id, farmer\_id, crop\_name, quantity, price, status)
- MarketRates (crop\_name, mandi\_name, price, date)
- Weather (region, forecast, date)
- Schemes (id, title, eligibility, link)
- Applications (user\_id, scheme\_id, status)

#### Localization

- Support major Indian languages: Hindi, Marathi, Telugu, Punjabi, etc.
- Use Google Translate API or local datasets for crop and region names

### Security

- OTP-based authentication (mobile number)
- Role-based access control
- Data privacy for farmer financial information

## **Real-World Impact**

- Empowers farmers with price transparency
- Reduces dependency on middlemen
- Increases awareness about entitlements and schemes
- Helps reduce distress and improve livelihoods

# **Optional Add-ons**

- Chatbot in local languages for query resolution
- Offline mobile app support for rural users
- **Blockchain traceability** of crop origin (for premium crops)