AgricultireIndia.com

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Main idea

Purpose: Manage and analyze agriculture data across India

Goal: Support farmers, researchers, and advisors in improving crop production, sustainability, and market planning
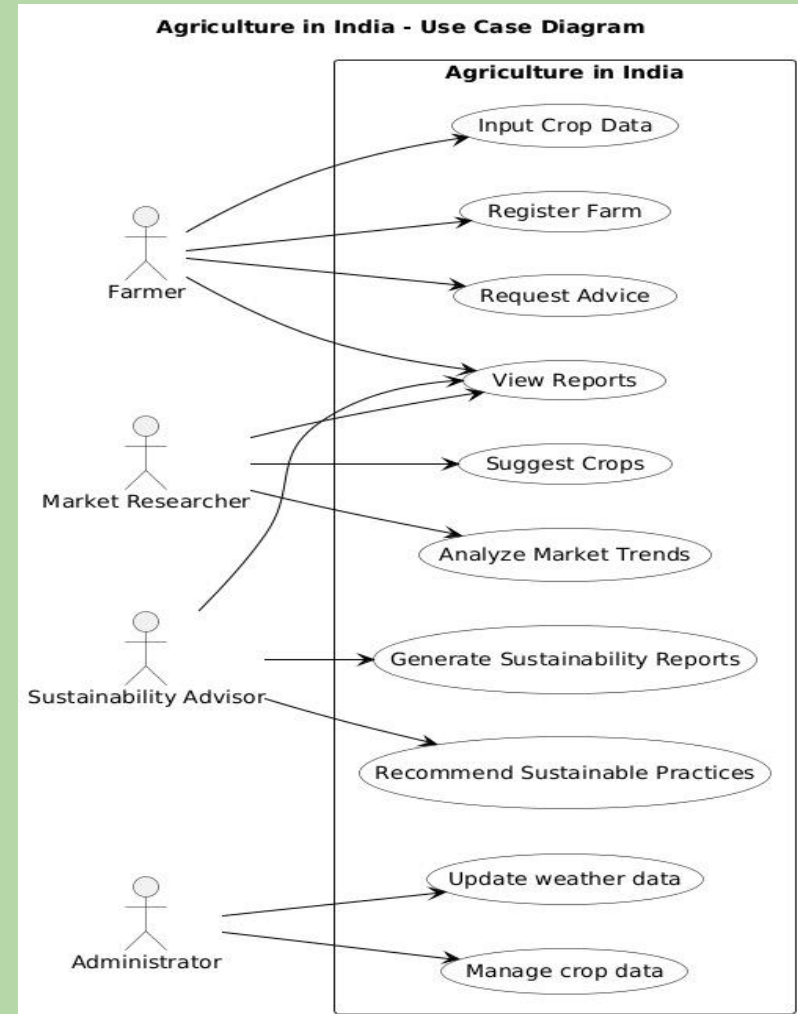
🎯 **Key Outcomes**

- Supports data-driven planning and decision-making

- Promotes sustainable and eco-friendly farming practices

- Helps forecast market trends and resource needs

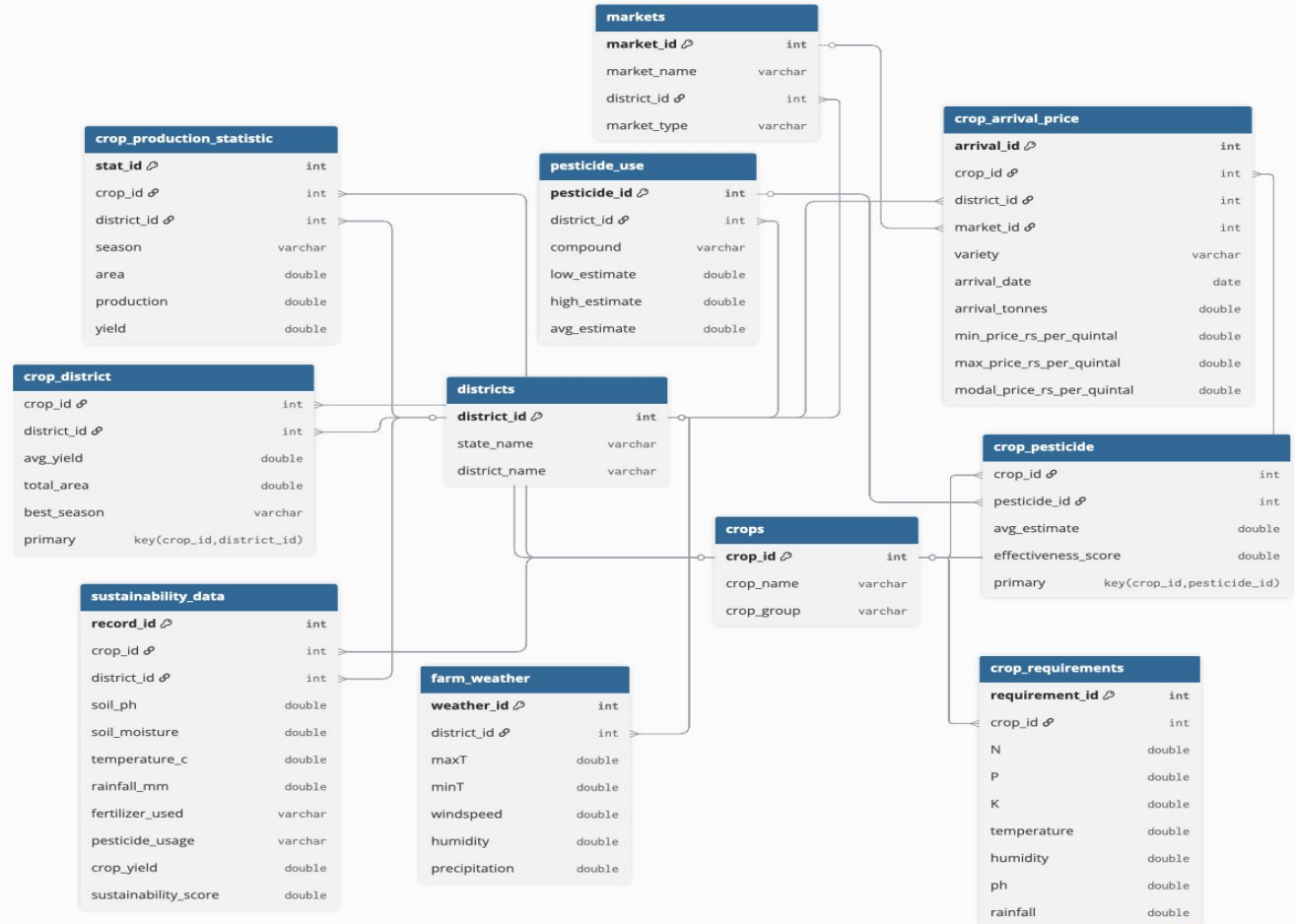- Turns agricultural data into useful, actionable insights

UML use case diagram

🧩 **1. Analyze Crop Production Trends:** Study changes in crop yields and production over time.

📈 **2. Identify Key Drivers of Productivity:** Find what factors (rainfall, soil, fertilizer, technology) affect agricultural output.

☀️ **3. Assess Climate and Policy Impacts:** Compare how weather conditions or government policies influence crop yields.

🧠 **4. Support Evidence-Based Decision Making:** Use data to guide resource allocation, planning, and policy development.

🌾 **5. Research Sustainable Practices:** Explore eco-friendly farming, crop diversification, and long-term soil health.

💧 **6. Monitor Fertilizer and Pesticide Usage:** Track input trends across regions to prevent overuse and protect the environment.

💹 **7. Forecast Market Prices and Demand:** Predict future crop demand and price fluctuations using historical data.

Agriculture in India - Use Case Diagram

Agriculture in India

Farmer
- Input Crop Data
- Register Farm
- Request Advice
- View Reports

Market Researcher
- Suggest Crops
- Analyze Market Trends

Sustainability Advisor
- Generate Sustainability Reports
- Recommend Sustainable Practices

Administrator
- Update weather data
- Manage crop data

E/R DIAGRAM

RELATIONAL SCHEMA

DISTRICTS(district_id, state_name, district_name)

CROPS(crop_id, crop_name, crop_group)

CROP_REQUIREMENTS(requirement_id, crop_id, N, P, K, temperature, humidity, ph, rainfall)

CROP_PRODUCTION_STATISTIC(stat_id, crop_id, district_id, crop_year, season, area, production, yield)

PESTICIDE_USE(pesticide_id, district_id, compound, low_estimate, high_estimate, avg_estimate)

CROP_PESTICIDE(crop_id, pesticide_id, avg_estimate, effectiveness_score)

CROP_DISTRICT(crop_id, district_id, avg_yield, total_area, best_season)

FARM_WEATHER(weather_id, district_id, record_date, maxT, minT, windspeed, humidity, precipitation)

SUSTAINABILITY_DATA(record_id, crop_id, district_id, record_year, soil_ph, soil_moisture, temperature_c, rainfall_mm, fertilizer_used, pesticide_usage, crop_yield, sustainability_score)

MARKETS(market_id, market_name, district_id, market_type)

CROP_ARRIVAL_PRICE(arrival_id, crop_id, district_id, market_id, variety, arrival_date, arrival_tonnes, min_price_rs_per_quintal, max_price_rs_per_quintal, modal_price_rs_per_quintal)

RELATION-SHIP TABLE

TABLE 1	RELATIONSHIP	TABLE 2
Districts	1:M	Crop_production_satistic
Crops	1:M	Crop_production_satistic
Districts	1:M	Pesticide_use
Districts	1:M	Farm_weather
Districts	1:M	Sustainability_data
Crops	1:M	Sustianability_data
Districts	1:M	Markets
Markets	1:M	Crop_arrival_price
Districts	1:M	Crop_arrival_price
Crops	1:M	Crop_arrival_price
Crops	1:1	Crop_requirements
Crops	M:N	Districts
Crops	M:N	Pesticide_use