Farmer and Land Records Analysis Dashboard

Abstract:

The Farmer and Land Records Analysis Dashboard is an interactive Power BI project that analyzes agricultural data, including farmer details, land usage, crop distribution, soil types, irrigation methods, and seasonal patterns. The dashboard provides interactive insights using slicers such as District, Crop Type, Season, Soil Type, and Irrigation Method to support data-driven agricultural decision-making.

Introduction:

Agriculture is a critical sector, and analyzing land and crop data helps in improving productivity and sustainability. This project transforms raw farmer and land records into meaningful visual insights using Power BI. Users can interactively explore various aspects of farming to understand trends and patterns.

Objective:

- To visualize farmer and land data effectively.
- To analyze crop distribution, soil types, and irrigation methods.
- To provide district-wise and season-wise insights.
- To support data-driven decision-making for agriculture.

Dataset Details:

File Name: farmer_land_records

The dataset includes:

- Farmer ID
- District
- Crop Type
- Soil Type
- Irrigation Method
- Season
- Land Area

Tools & Technologies:

- Power BI Desktop
- Microsoft Excel
- Power Query (Data Cleaning & Transform)
- DAX (Data Analysis Expressions)

Dashboard Features:

- District-Level Insights
- Crop Analysis
- Soil Type Insights
- Irrigation Method Analysis
- Seasonal Farming Patterns
- Interactive Slicers: District, Crop Type, Season, Soil Type, Irrigation Method

DAX Measures Used:

```
Total_Farmers = DISTINCTCOUNT(FarmerID)
Total_Land_Area = SUM(LandArea)
Total_Crop_Count = DISTINCTCOUNT(CropType)
Average_Land_Per_Farmer = DIVIDE([Total_Land_Area], [Total_Farmers])
Season_Wise_Area = CALCULATE([Total_Land_Area], ALLEXCEPT(FarmerData, Season))
Crop_Wise_Land = CALCULATE([Total_Land_Area], ALLEXCEPT(FarmerData, CropType))
```

Conclusion:

This project demonstrates the ability to transform raw agricultural data into interactive insights using Power BI. It supports better understanding of crop distribution, land usage, and irrigation patterns. The dashboard is a useful tool for farmers, policymakers, and agricultural analysts to make informed decisions.

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