📊 Agriculture Data Analysis Dashboard – Summary Report

🧭 Dashboard Objective

To provide a deep analytical view of agricultural production, yield, area, and growth trends across India (1966–2020), using **Power BI** and **PostgreSQL**. The insights help drive data-backed decisions at state and district levels.

📘 Page 1: Overview_Trends

1. Top 3 States – Year-wise Rice Production

- **Explanation:** Shows how rice output changed over time in Punjab, Uttar Pradesh, and West Bengal.
- **Chart Type:** Line Chart (multi-line)

2. Annual Average Maize Yield

- **Explanation:** Displays maize yield (kg/ha) trends across all states averaged per year, showing improvements over decades.
- **Chart Type:** Line Chart

3. Total Foodgrain Production (Rice + Wheat + Maize)

- **Explanation:** Illustrates overall foodgrain production trend across India.
- **Chart Type:** Area Chart

4. Cotton Yield – Top 5 States

- **Explanation:** Compares yearly cotton yield in the top five producing states to observe fluctuations or trends.
- **Chart Type:** Multi-line Line Chart

5. KPI Cards – Total Production

- **Explanation:** Shows cumulative total production of rice, wheat, and maize from 1966 to 2020.
- **Chart Type:** KPI Cards (with metric numbers)

📘 Page 2: District_Yield_Performance

6. Top 5 Districts – Wheat Yield Increase (Last 5 Years)

- **Explanation:** Identifies districts with the highest improvement in wheat yield based on change between earliest and latest 5-year periods.
- **Chart Type:** Bar Chart

7. Top 10 Districts – Rice Yield

- **Explanation:** Highlights districts with the highest rice yield (tons per hectare), showing regional efficiency.
- **Chart Type:** Bar Chart (horizontal)

8. District-Wise Area vs Production Table (Rice, Wheat, Maize)

- **Explanation:** Compares how much area is used and how much is produced per district for major crops; used to analyze yield efficiency.
- **Chart Type:** Table/Grid

9. Top 10 Districts – Groundnut Production (2020)

- **Explanation:** Displays groundnut production by district for the latest available year (2020) to highlight regional specialization.
- **Chart Type:** Stacked Bar Chart

📘 Page 3: Crop_Comparison_GrowthAnalysis

10. Top 5 States – Total Rice Production

- **Explanation:** Ranks states by total rice production to identify top performers.
- **Chart Type:** Bar Chart

11. Rice vs Wheat Production by State

- **Explanation:** Compares rice and wheat output across states for the last decade.
- **Chart Type:** Clustered Bar Chart (dual series)

12. Oilseed Growth Rate – Top 3 States

- **Explanation:** Calculates and compares oilseed production growth over 5 years using change in total output.
- **Chart Type:** Bar Chart

13. Oilseed Cultivation Area – Map View

- **Explanation:** Visualizes state-wise oilseed area using color-coded map to show concentration of cultivation.
- **Chart Type:** Filled Map / Choropleth

14. Groundnut Production by District (2020)

- **Explanation:** Highlights districts with significant groundnut production in the latest year.
- **Chart Type:** Bar Chart

✅ **Summary Table**

Page	Topic	Explanation	Chart Type
1	Rice Production – Top States	Year-wise rice trend for Punjab, UP, WB	Line Chart
1	Avg. Maize Yield	National average maize yield trend	Line Chart
1	Total Foodgrain Production	Combined trend of rice, wheat, maize	Area Chart
1	Cotton Yield – Top States	Year-wise cotton yield comparison	Line Chart
1	KPI Cards	Total production of major crops	KPI Cards
2	Wheat Yield Growth	Top districts by recent growth	Bar Chart
2	Top Rice Yielding Districts	Most efficient rice-yield districts	Bar Chart
2	Area vs Production Table	Cross-check efficiency by district	Table
2	Groundnut by District (2020)	District-wise recent groundnut data	Bar Chart
3	Rice Production – Top States	Highest rice producing states	Bar Chart
3	Rice vs Wheat Comparison	Crop-wise comparison by state	Clustered Bar
3	Oilseed Growth Rate	Fastest growth in oilseed output	Bar Chart
3	Oilseed Area Map	Area-wise oilseed map by state	Map Chart
3	Groundnut Production (2020)	District-wise view for 2020	Bar Chart