Power BI - Global Food Production Trends and Analysis (1961 - 2003)

1. Project Description

The **Global Food Production Analysis** project is a comprehensive visual analytics report that explores how various food commodities have been produced worldwide over several decades. Using historical data from **1961 to 2003** (with extended insights till **2023**), this project reveals trends in agricultural output, identifies regional production leaders, and highlights the comparative scale of staple and fruit-based food items. This analysis supports data-driven discussions in agriculture, food sustainability, and global trade.

2. Objectives

- To identify global trends in the production of staple foods (rice, wheat, maize, tea).
- To evaluate the contribution of regions and countries in coffee and fruit production.
- To understand the growth trajectory of food commodities over time.
- To visualize production volumes using interactive dashboards.

3. Key Features of the Dashboard

□ Main KPIs

- **Wheat Production:** 282 billion tonnes
- **Rice Production:** 269 billion tonnes
- **Tea Production:** 2 billion tonnes

📊 Charts & Visualizations

Chart Type	Description
Bar Chart	Coffee production by country
Stacked Area Chart	Wheat, rice, and maize trends by year
Clustered Area Chart	Avocados, apples, bananas, oranges by entity
Donut Chart	Year-wise maize production (1961–2006)
Horizontal Bar Chart	Total global fruit production
Gauge Chart	Tea production (2bn/3bn target visualized)

Key Highlights:

Dashboard 1 – Summary View (1961–2023):

- **269bn tonnes** – Total rice production globally
- **282bn tonnes** – Total wheat production globally
- **2bn tonnes** – Total tea production globally

Coffee Production:

- Top producers: Africa, followed by America and Asia

Grain Trend Analysis (Line Chart):

- Shows steady year-over-year increase in production for wheat, maize, and rice
- Wheat shows the sharpest growth curve

Maize Production (Donut Chart):

- Distribution of maize production year-wise, with major spikes post-1980s and 2000s

Dashboard 2: Fruit Production Comparison

- **Grapes:** 43bn tonnes – highest among fruits
- **Apples:** 39bn tonnes
- **Bananas:** 32bn tonnes
- **Oranges:** 26bn tonnes

Additional Visuals

- Bar charts comparing food category outputs across countries/entities
- Time-series charts showing production growth from 1961 onward
- KPI cards for quick view of total production values
- Gauge chart for tea production target visualization

Report Summary

- Wheat, maize, and rice have shown steady growth, especially wheat
- Africa, America, and Asia lead in green coffee production
- Fruits like apples, bananas, oranges, and grapes are widely produced, with high output from Europe and Asia
- Maize production increased rapidly in late 1980s and early 2000s
- Tea production is relatively smaller (2bn tonnes) but stable

⚙ Tools Used

- Power BI Desktop for dashboard design
- CSV files for data sourcing and modeling
- Visualizations used:
    - Bar charts
    - Line charts
    - Donut charts
    - KPI cards
    - Gauge chart

Suggested Improvements

- Add slicers for filtering by year, commodity, and region
- Include forecasting visuals to project future production trends
- Integrate population or consumption per capita for deeper insights