**Business Question and Visualization Report**

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| Date | 26 June 2025 |
| Team ID |  |
| Project Name | Global Food Production Trends and Analysis (1961–2023) |
| Maximum Marks | 5 Marks |

**Framing Business Questions**

The purpose of visualization is not just to present data, but to answer specific business and analytical questions about global food production. For this project, the following guiding questions were framed:

🌍 **Global-Level Questions**

* Which commodities dominate global food production volumes between 1961–2023?
* How has global production of high-volume crops (e.g., Sugarcane, Cereals) evolved over time?
* What percentage share do different commodity categories (Cereals, Fruits, Oilseeds, etc.) contribute to total food output?

🌱 **Commodity-Level Questions**

* Which countries are the leading producers of specific commodities (e.g., Coffee, Tea, Cocoa)?
* How do production trends differ across cash crops vs. staple crops?
* What are the top commodities in terms of consistent year-on-year growth?

🌏 **Country/Region-Level Questions**

* Which entities contribute the most to global food production?
* How do regions differ in their specialization (e.g., Asia in Rice, South America in Coffee)?
* How do country-level production patterns shift across decades (1960s vs. 2020s)?
* Which commodities show long-term upward vs. stagnant growth trends?
* Are there visible patterns of diversification in global food production?
* How can policymakers or agribusinesses identify opportunities for food security and trade from these insights?

These questions acted as the blueprint for designing the dashboards and selecting the appropriate visualization techniques in Power BI.

**Developing Visualizations**

Using the cleaned and preprocessed dataset, two main dashboards were designed in Power BI to answer the business questions above.

**🔷 Dashboard 1: Global Production Overview**

Objective: Provide a high-level snapshot of food production trends by commodity and country.

**Visuals Developed:**

* Pie Chart: Commodity-wise production breakdown (Cereals, Fruits, Oilseeds, Root Crops, Cash Crops).
* Line Chart: Long-term trend of Sugarcane production (1961–2023).
* KPI Cards: Total production volume (e.g., Sugarcane: 621.62 billion tonnes).
* Clustered Bar Chart: Annual comparison of Coffee, Tea, and Cocoa production.
* Treemap: Entity-wise total production distribution across countries.
* Slicers/Filters: Interactive controls for Year, Entity, and Commodity Item.
* Donut Chart + KPI: Commodity or entity-specific production summary.

**🔷 Dashboard 2: Analytical Report View**

Objective: Enable deeper drill-down analysis and interpretation of production trends.

**Visuals Developed:**

* Bar Chart: Top entities ranked by total food production.
* Textual Analysis Panels: Key observations about:
  + Crop-specific trends
  + Regional production patterns
  + Country-level highlights
  + Sugarcane dominance
* Comparative Analysis Charts: Side-by-side insights into multiple commodities.
* Narrative Cards: Summary of visual interpretations to assist decision-makers.

**Outcome of Visualization**

* Business Insights Made Accessible: Complex agricultural datasets translated into intuitive visual stories.
* Interactive Exploration: Stakeholders can filter by year, country, or commodity for custom insights.
* Strategic Relevance: Dashboards highlight global leaders, emerging trends, and commodity dominance useful for policy, trade, and sustainability discussions.