<p align="center">**Documentation Phase**</p>

<p align="center">**Final Report**</p>

Date	9 March 2025
Team ID	PNT2025TMID00740
Project Name	Global Food Production and Trend Analysis

Introduction:

Food production plays a crucial role in global sustainability, economic stability, and food security. This report provides an in-depth analysis of worldwide agricultural trends, highlighting key food production statistics, variations over time, and future projections. The data-driven insights presented here will help policymakers, industry stakeholders, and researchers make informed decisions regarding food supply chains and sustainability.

Objective of the project:

- To analyze year-wise food production trends across different regions and categories.
- To identify major contributors to global food production.
- To examine fluctuations in food production due to economic, climatic, and technological factors.
- To provide actionable insights for improving food sustainability and security.

Ideation Phase:
https://drive.google.com/drive/folders/1f01wDYV8P8MduS2FuV8rk2vbCkfkxi4X?usp=sharing

Requirement Analysis:
https://drive.google.com/drive/folders/1I0qH0KfnRbBAjtbPVZQQ8dQxwggKP_G7?usp=drive_link

Project Design: https://drive.google.com/drive/folders/1KdObXnVxYkwCtUxj0TMX8fTK7Bi0Y-oh?usp=sharing
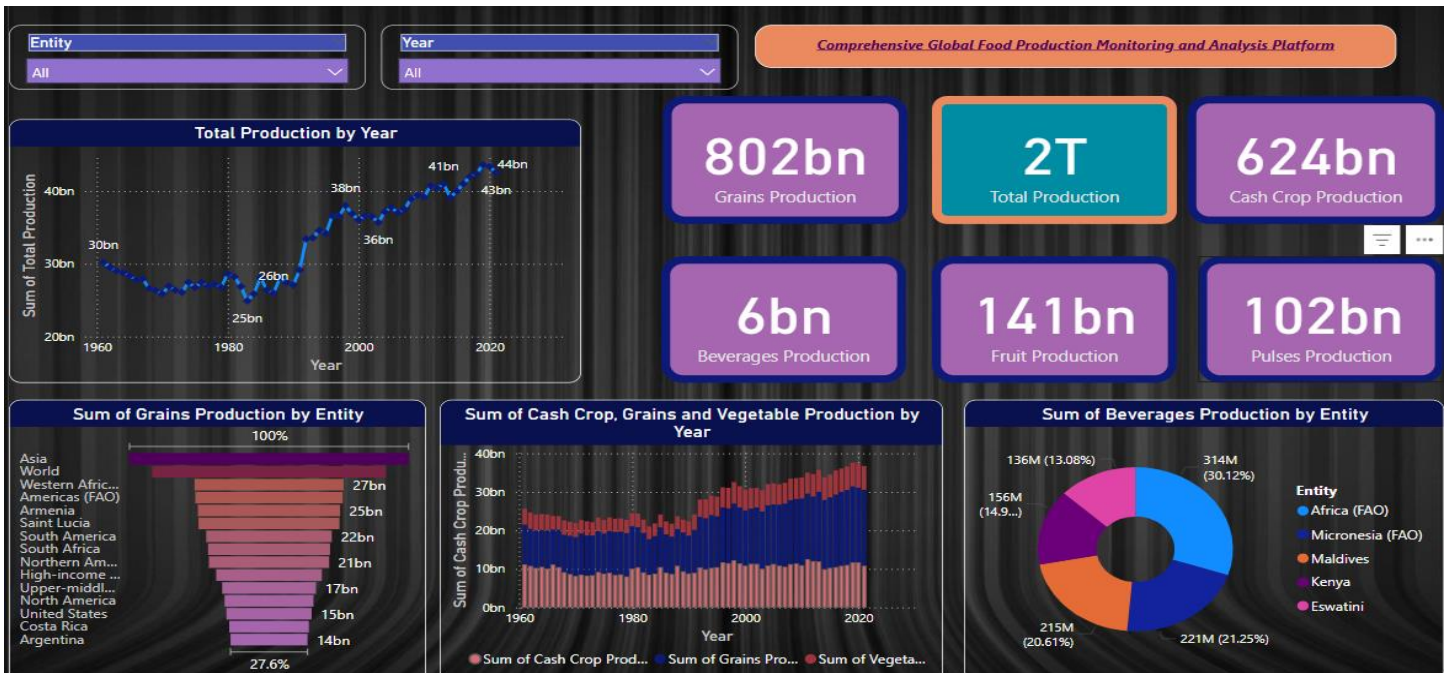
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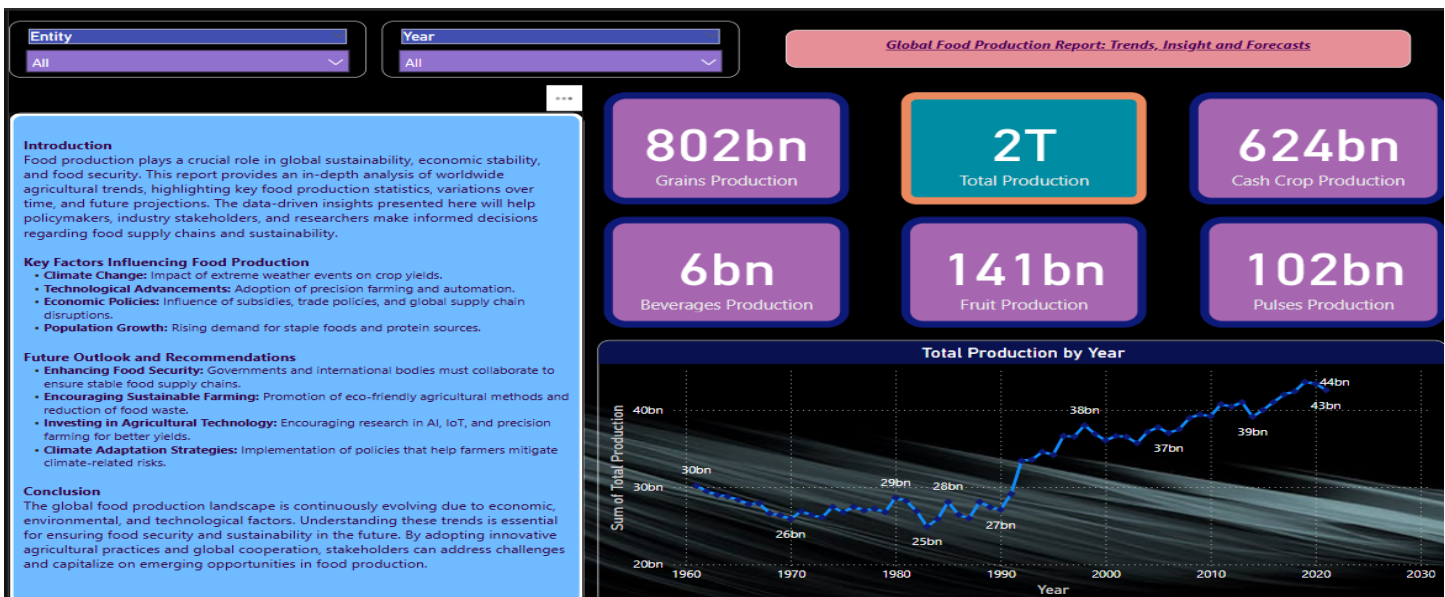https://drive.google.com/drive/folders/1lOogVFtIX6F8R_62Pf_YMo1sFqPfO5JG?usp=sharing

Functional and Performance Testing: https://drive.google.com/drive/folders/1-kEGAZbGK5Oepp90Ts0bObJKHVqNfF4W?usp=sharing

Results:

Screenshots of Dashboard and observation:

Screenshot of Report and observation:

Advantages:

- **Data-Driven Insights:** Provides a comprehensive analysis of food production trends over six decades, helping policymakers and researchers make informed decisions.
- **Interactive Visualizations:** Power BI allows for intuitive exploration of food production trends, improving data accessibility.
- **Identification of Key Patterns:** Helps detect seasonal trends, production peaks, and anomalies in global food supply.

- **Real-Time Data Updates:** Ensures timely responses to food production fluctuations and supply chain issues.
- **Scalability and Customization:** Can be expanded with additional datasets and predictive analytics for deeper insights.

Disadvantages:

- **Data Accuracy Concerns:** Historical data may have inconsistencies due to variations in collection methods.
- **Performance Limitations:** Large datasets spanning multiple decades may cause performance issues in Power BI.
- **Technical Complexity:** Advanced users may need expertise in DAX, SQL, and Power Query for deeper customization.
- **Limited Predictive Capabilities:** While great for historical analysis, additional integrations are needed for AI-based forecasting.
- **Data Privacy & Sharing Constraints:** Some organizations may restrict public sharing of Power BI reports due to data sensitivity.

Conclusion: The global food production landscape is continuously evolving due to economic, environmental, and technological factors. Understanding these trends is essential for ensuring food security and sustainability in the future. By adopting innovative agricultural practices and global cooperation, stakeholders can address challenges and capitalize on emerging opportunities in food production.

Future Scope:

- **Enhancing Food Security:** Governments and international bodies must collaborate to ensure stable food supply chains.
- **Encouraging Sustainable Farming:** Promotion of eco-friendly agricultural methods and reduction of food waste.
- **Investing in Agricultural Technology:** Encouraging research in AI, IoT, and precision farming for better yields.
- **Climate Adaptation Strategies:** Implementation of policies that help farmers mitigate climate-related risks.

Appendices:
- **Dataset link:** https://www.kaggle.com/datasets/rafsunahmad/world-food-production
- **Github link:** https://github.com/Shagun5114/Global-Food-Production-Trends-and-Analysis-A-Comprehensive-Study-from-1961-to-2023-Using-Power-BI.git
- **Demo link:** https://drive.google.com/file/d/1lSRNg9ZXql1iMi26TejfrC4XqvPEonkL/view?usp=sharing