Project Initialization and Planning Phase

Date	29 June 2025
SkillWallet ID	SWUID20250170810
Project Title	Global Food Production Trends and Analysis: A Comprehensive Study from 1961 to 2023 Using Power BI
Maximum Marks	3 Marks

Project Proposal (Proposed Solution) template

This project aims to develop an interactive data analysis and visualization system that provides insights into global food production trends from 1961 to 2023. Using a Power BI dashboard and a comprehensive dataset from Kaggle, the system will empower stakeholders—including policymakers, researchers, and agribusiness professionals—to explore crop production patterns by commodity, region, and time. This user-focused approach will enable strategic planning, trend analysis, and data-driven decision-making in the agricultural sector.

Project Overview	
Objective	The objective of this project is to develop a data-driven, interactive visualization tool that offers clear insights into six decades of global food production. The system aims to simplify complex datasets into intuitive charts and dashboards, enabling users to track trends in major commodities such as rice, wheat, maize, coffee, tea, and various fruits.

Scope	This project will build Power BI dashboards that: • Visualize crop production volumes (1961–2023) across multiple regions. • Highlight key trends for staple grains, beverages, and fruits. • Enable comparisons between regions and commodities. • Provide policymakers, researchers, and industry experts with actionable insights to support global food strategy and sustainability.
Problem Statement	
Description	Professionals in agriculture and food policy face challenges analyzing long-term production trends across multiple regions and crops. The raw data is often fragmented, complex, and lacks effective visual representation, making it difficult to derive actionable insights.
Impact	A centralized, visual platform will significantly improve understanding of historical food production trends. By converting complex data into meaningful insights, the tool can guide agricultural planning, investment strategies, and sustainability efforts globally.
Proposed Solution	

Approach	The project will follow a user-centered approach to develop interactive dashboards using Power BI. It will: ● Import and clean data from the Kaggle World Food Production dataset. ● Design visualizations (e.g., bar charts, area charts, line graphs, gauges) to reflect crop-wise and region-wise trends. ● Highlight key production insights, such as top-producing regions, total volumes, and yearly trends.
Key Features	● Trend Visualizations: View yearly production patterns for wheat, rice, maize, tea, and more and analyze which countries or continents lead in producing specific commodities. ● Fruit Production Comparison: Compare total production of apples, grapes, bananas, and oranges across regions. ● Interactive Dashboards & Decision Support: Explore data dynamically via filters, time ranges, and commodity selection and equip users with insights for policy-making, sustainability analysis, and food security planning.

Resource Requirements:

Resource Type	Description	Specification/Allocation
Hardware		
Computing Resources	The physical or virtual system used to develop and run the Power BI solution.	Standard Windows PC or laptop with a modern multi-core CPU
Memory	Required for smooth operation of Power BI and handling large datasets.	8–16 GB RAM
Storage	Needed for storing raw datasets, processed files, and exported reports.	1 TB HDD or SSD (recommended for faster performance)
Software		
Frameworks	Visualization Platform	Power BI Desktop
Libraries	Data preprocessing, DAX, PQ functions	Built-in DAX & Power Query
Development Environment	Report Design + Github Documentation	Power BI + VS Code/Git for README
Data		
Data	Source, size,format	Kaggle Dataset, ~170,000 rows,CSV format