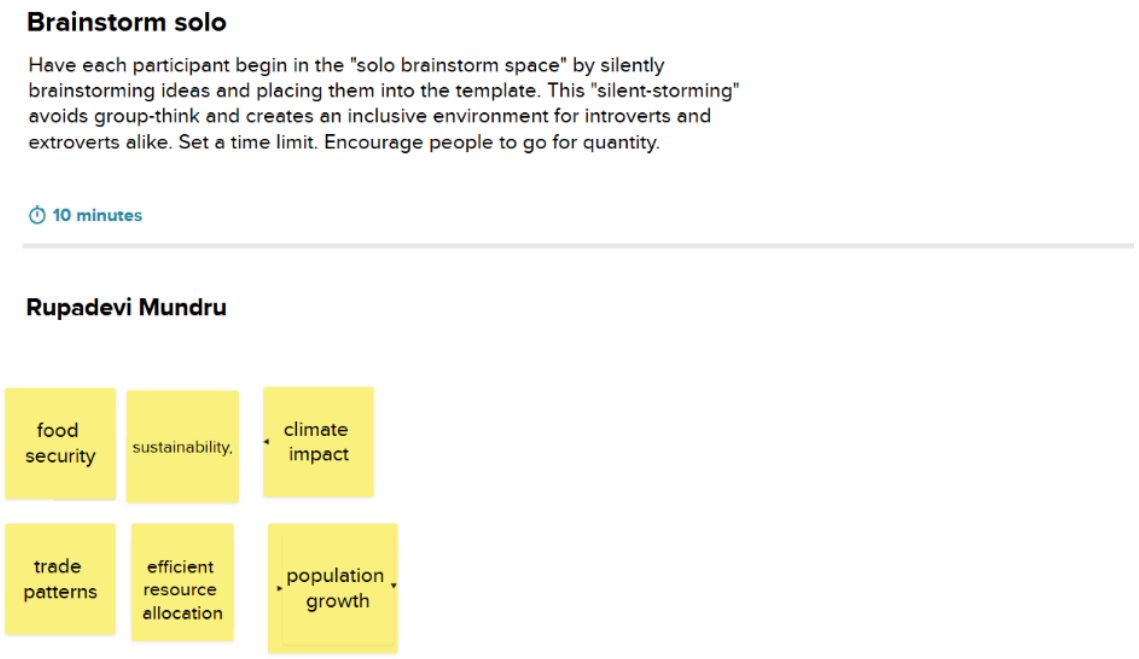
Ideation Phase
Brainstorm & Idea Prioritization Template

Date	13 March 2025
Team ID	PNT2025TMID07288
Project Name	Global Food Production Trends and Analysis: A Comprehensive Study from 1961 to 2023 Using Power BI
Maximum Marks	4 Marks

Step-1: Team Gathering, Collaboration and Select the Problem Statement



Problem Statement

Global food production has undergone significant changes from **1961 to 2023**, influenced by **climate change, technological advancements, trade policies, and population growth**. Understanding these trends is crucial for ensuring **food security, sustainability, climate impact, trade patterns,population growth and efficient resource allocation**.

Project Goal

To develop an **interactive Power BI dashboard** that provides insights into **global food production trends (1961–2023)** by analyzing:

Food production trends by country, crop type, and year
Climate change impact on agricultural productivity
Trade and supply chain analysis for exports/imports
Top food-producing nations and their contribution to global supply
Sustainability and efficiency in agriculture

Step-2: Brainstorm, Idea Listing and Grouping

Project Phases & Execution

1 . Technical Architecture

- **Data Sources** → FAO, World Bank, NASA, UN Comtrade
- **Data Storage** → SQL Database / Excel / Power BI Dataset
- **Data Processing** → Cleaning, transformation using Power Query
- **Visualization & Reporting** → Power BI Dashboard & Reports

2 . Data Collection & Extraction

- Download **historical food production data** from FAO (1961–2023)
- Collect **climate and trade data** from NOAA, World Bank, UN Comtrade
- Store data in **structured format (Excel/SQL database)**

3 . Data Preparation & Transformation

- Clean & filter **missing/inconsistent data**
- Standardize **units of measurement** (tonnes, hectares, GDP)
- Merge different datasets for **cross-analysis**

4 . Power BI Data Visualization

Key Dashboard Components:
Line Charts – Food production trends over time
Bar Charts – Top 10 food-producing countries
Maps (Geospatial Visualization) – Production by region
Sankey Diagram – Global trade flow of food exports/imports
Scatter Plot – Impact of climate factors on production

5 . Report Design & Storytelling

- Executive Summary **(High-level insights for decision-makers)**
- Country-wise Analysis **(Food production and trade statistics)**

- Climate Impact Analysis **(Rainfall, temperature vs. yield)**
- Future Projections **(Machine learning-based trend prediction)**

6 . Performance Testing & Optimization

- **Optimize DAX calculations** for efficiency
- **Ensure real-time data updates** if applicable
- **Check dashboard responsiveness** for different devices

7 . Final Documentation & Project Demonstration

- **User Guide** for navigating the Power BI dashboard
- **Technical Documentation** for data sources, architecture, and methodology
- **Project Presentation** for stakeholders

Step-3: Idea Prioritization

Idea	Priority Level (High/Medium/Low)	Reason for Priority
Data Cleaning & Transformation	High	Essential for accurate production insights
Stacked Bar Chart (Crop Type vs Production)	High	Shows key agricultural production trends
Scatter Plot (Year vs Production Volume)	High	Helps identify long-term production patterns
Line Chart (Wheat, Rice & Maize Trends)	High	Highlights major crop production growth
Pie Chart (Regional Contribution)	High	Visualizes region-wise production share
Card Visuals (Key Production Metrics)	High	Provides quick and clear insights
Decomposition Tree (Production Analysis)	High	Breaks down key factors influencing trends
Predictive Insights (Future Production Trends)	Medium	Useful for forecasting, needs refinement

4

Prioritize

Your team should all be on the same page about what's important moving forward. Place your ideas on this grid to determine which ideas are important and which are feasible.

20 minutes

Importance

If each of these tasks could get done without any difficulty or cost, which would have the most positive impact?

Feasibility

Regardless of their importance, which tasks are more feasible than others? (Cost, time, effort, complexity, etc.)