SDG Problem Definition Document

Sustainable Development Goal (SDG): SDG 2: Zero Hunger

Problem Title: Addressing Unequal Food Distribution to Combat Food Insecurity

Background:

Food insecurity remains a significant global challenge, affecting millions of people, especially in developing regions. While some areas produce a surplus of food, others face chronic shortages, leading to malnutrition and hunger. This imbalance is often due to unequal food distribution, inadequate logistics, and a lack of real-time data to inform redistribution strategies. To achieve SDG 2: Zero Hunger, it is crucial to address these systemic challenges through data-driven solutions.

Specific Problem Definition:

The problem of unequal food distribution arises from disparities in food production, transportation bottlenecks, and insufficient data to optimize resource allocation. This project aims to analyze food production and demand data across regions to identify gaps in food distribution and recommend efficient redistribution strategies. By leveraging data, we can ensure food is delivered to under-supplied areas, reducing hunger and supporting vulnerable populations.

Scope of the Problem:

1. Geographical Disparities: Certain regions produce more food than they can consume, while others lack sufficient resources to meet local demand.
2. Logistical Challenges: Inefficient transportation and storage systems lead to food waste and hinder redistribution efforts.
3. Data Gaps: Limited access to real-time data on food production, demand, and distribution impedes informed decision-making.

Proposed Data-Driven Solution:

1. **Database Development**: Create a relational database to track food production, distribution, and demand at regional levels. Key entities include farmers, markets, distribution centers, and food distribution records.
2. **Data Analysis**: Use SQL to analyze supply and demand data, identify regions with food surpluses and deficits, and assess logistical bottlenecks.
3. **Visualization and Insights**: Develop an interactive Excel dashboard to visualize food distribution patterns and highlight areas for improvement.
4. **Recommendations**: Provide actionable insights for policymakers, NGOs, and distribution networks to optimize food allocation and reduce hunger.

Objectives:

- To identify regions with a supply-demand gap in food resources.
- To analyze food distribution patterns and propose data-driven redistribution strategies.
- To support decision-making by providing insights through interactive dashboards.

Expected Impact:

1. **Reduced Food Insecurity:** Ensure that under-supplied regions receive adequate food resources.
2. **Improved Resource Allocation:** Optimize food distribution networks to minimize waste and maximize efficiency.
3. **Enhanced Decision-Making**: Provide stakeholders with actionable insights to address food insecurity sustainably.

Target Stakeholders:

- Policymakers and government agencies responsible for food distribution.
- Non-governmental organizations (NGOs) addressing hunger and malnutrition.
- Farmers, distributors, and market operators.
- Vulnerable populations in under-supplied regions.

Conclusion:

By addressing unequal food distribution through a data-driven approach, this project aligns with the goals of SDG 2: Zero Hunger. It leverages technology to create a sustainable and equitable food distribution system, reducing hunger and improving the lives of millions worldwide.