**SDG Selection and Problem Definition**

**SDG Chosen:** SDG 6: Clean Water and Sanitation

**Specific Problem:** **Access to Safe Drinking Water in Remote Rural Areas**

**Problem Definition:**

Access to safe drinking water is a critical issue in many remote and rural areas around the world. In these regions, people often rely on unsafe water sources, which can lead to serious health issues such as waterborne diseases. Addressing this problem involves ensuring that clean water sources are available and accessible to these communities.

**Objectives of the Data-Driven Solution**

1. **Identify Water Sources:**
   * Map existing water sources (wells, pumps, etc.) and assess their quality and accessibility.
2. **Analyze Accessibility:**
   * Determine the geographic distribution of water sources and identify areas that lack access to safe drinking water.
3. **Evaluate Water Quality:**
   * Analyze the quality of water sources and identify any contamination issues.
4. **Improve Resource Allocation:**
   * Use data to optimize the allocation of resources and interventions to improve access to clean water in the most affected areas.

### Approach to Address the Problem

1. **Data Collection:**
   * **Water Sources Data:** Information on the location, type, and quality of existing water sources.
   * **Demographic Data:** Population data to understand the number of people affected.
   * **Health Data:** Incidence of waterborne diseases in the area.
2. **Database Design:**
   * Design a relational database to store and manage data on water sources, population, and health.
3. **Data Analysis:**
   * Use SQL queries to analyze the data and identify trends, gaps, and areas of need.
4. **Visualization:**
   * Create visualizations and dashboards in Microsoft Excel to represent the data, such as maps showing the distribution of water sources and charts displaying water quality and accessibility.

### Example Data-Driven Solution

**SDG Chosen:** SDG 6: Clean Water and Sanitation

**Specific Problem:** Access to safe drinking water in remote rural areas.

**Problem Definition:**

* **Challenge:** Many rural communities lack reliable access to clean water sources, leading to health risks and reduced quality of life.
* **Data Required:**
  + **Water Sources:** Location, type, and quality of water sources.
  + **Demographics:** Population density and distribution.
  + **Health Data:** Prevalence of waterborne diseases.