Project Summary: Drinking Water Access Analysis (Google Sheets)

📌 Project Objective

To analyze the evolution of access to different levels of drinking water services worldwide — with a specific focus on **Sub-Saharan Africa** — using WASH (UNICEF/WHO) data from **2012 to 2022**.

🛠️ Steps Completed

1. **Data Cleaning**
    - Removed unnecessary columns (e.g., "type")
    - Created separate sheets for each water service level (drinking water, surface water, safely managed, etc.)
2. **Global Exploration**
    - Built pivot tables by region, year, and residence type (rural, urban, total)
    - Created regional average visualizations with clear insights
3. **Temporal Analysis**
    - Line charts showing trends over time by region
    - Compared rural, urban, and total population access levels
4. **Regional Focus – Sub-Saharan Africa**
    - Region selected due to:
        - The lowest access to safely managed services
        - Persistent rural–urban disparities
    - Used **stacked bar charts** to show evolution of service levels
5. **Cross-analysis with Population Size**
    - Built bubble charts comparing service access vs. population size (2012 and 2022)
6. **Focus on Inadequate Access**
    - Calculated share of population with **limited**, **unimproved**, or **surface water** access

    - Visualized evolution from 2012 to 2022 using stacked bar charts

7. **Conditional Formatting**
    - Applied color coding by **service level** to enhance clarity and highlight disparities

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📊 Tools & Data Used

- **Google Sheets** (pivot tables, charts, filters, annotations)
- **WASH dataset (UNICEF/WHO JMP)**
- **Visualizations**: line charts, stacked bar charts, bubble charts

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🔍 Key Findings

- Although global progress has been made, **rural–urban inequalities** remain significant.
- **Sub-Saharan Africa** is the most impacted region, especially in rural areas.
- Inadequate access (limited, unimproved, or surface water) still concerns a large portion of the population in several regions.