Interactive Food Security Monitoring Tool for Karamoja

Developed for NGO by Dalberg Data Insights (DDI)

Introduction

- Background on Karamoja's Food Insecurity
  - Karamoja, located in northeastern Uganda, is considered the most food-insecure region in the country due to several interconnected factors. These challenges significantly impact agricultural productivity, leading to low crop yields and chronic food shortages. The key reasons for food insecurity in Karamoja include:

    1. Extreme Droughts and Unreliable Rainfall
    2. Pests and Crop Diseases
    3. Low Agricultural Productivity

3. Research Question & Objectives

- **Research Question:**
  - *How can we develop an interactive visualization tool to help NGOs monitor food security and prioritize interventions?*
- **Objectives:**
  - To establish the total crop area production per district
  - To establish which crop is yielding more per district
  - Develop a **visualization tool** for monitoring sorghum and maize yields.
  - Integrate **satellite data** to remotely assess crop production.
  - Enable **district-level** analysis for both Sorghum and Maize
  - Improve **data-driven decision-making** for NGOs.

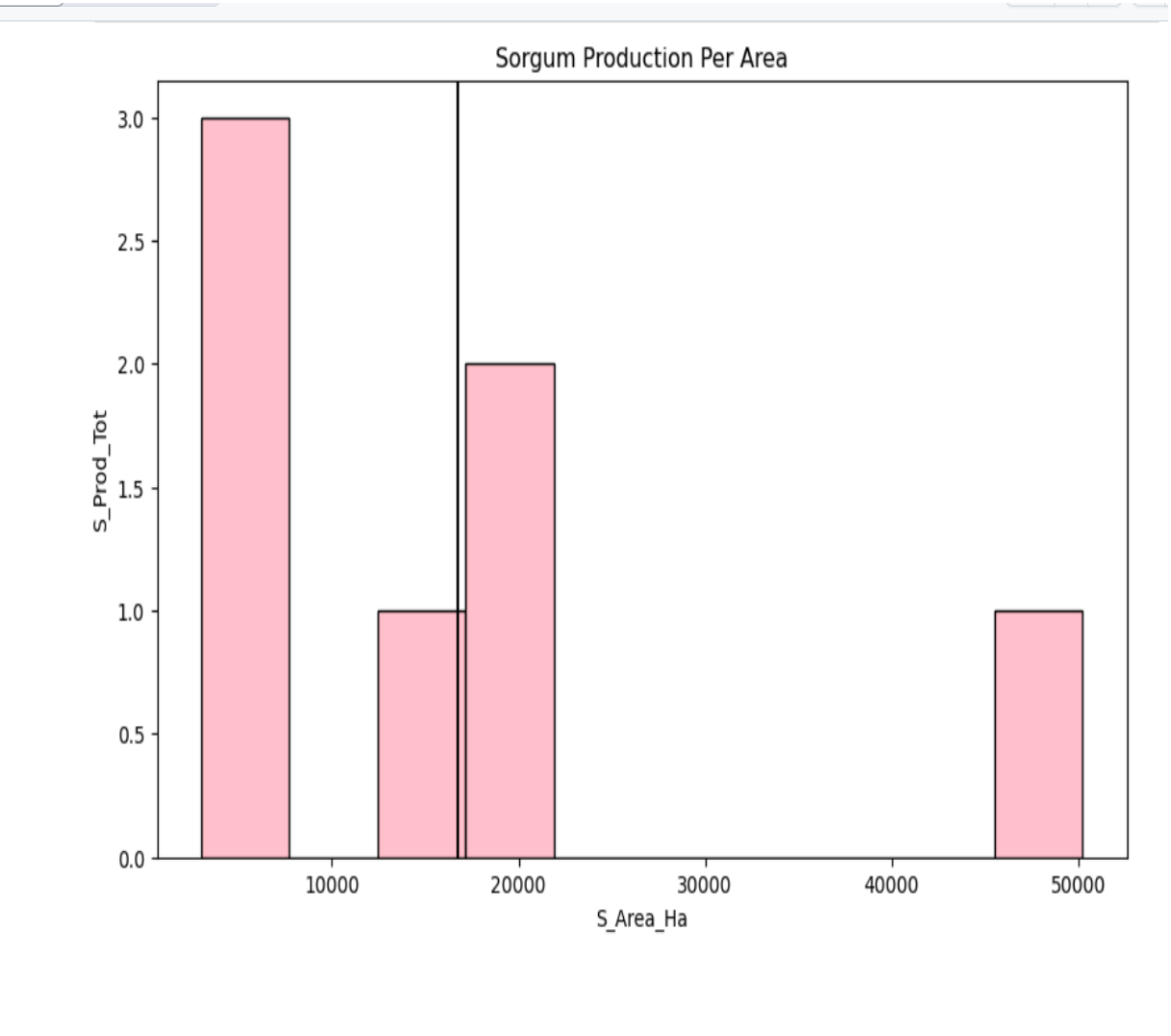
4. Data Sources & Methodology

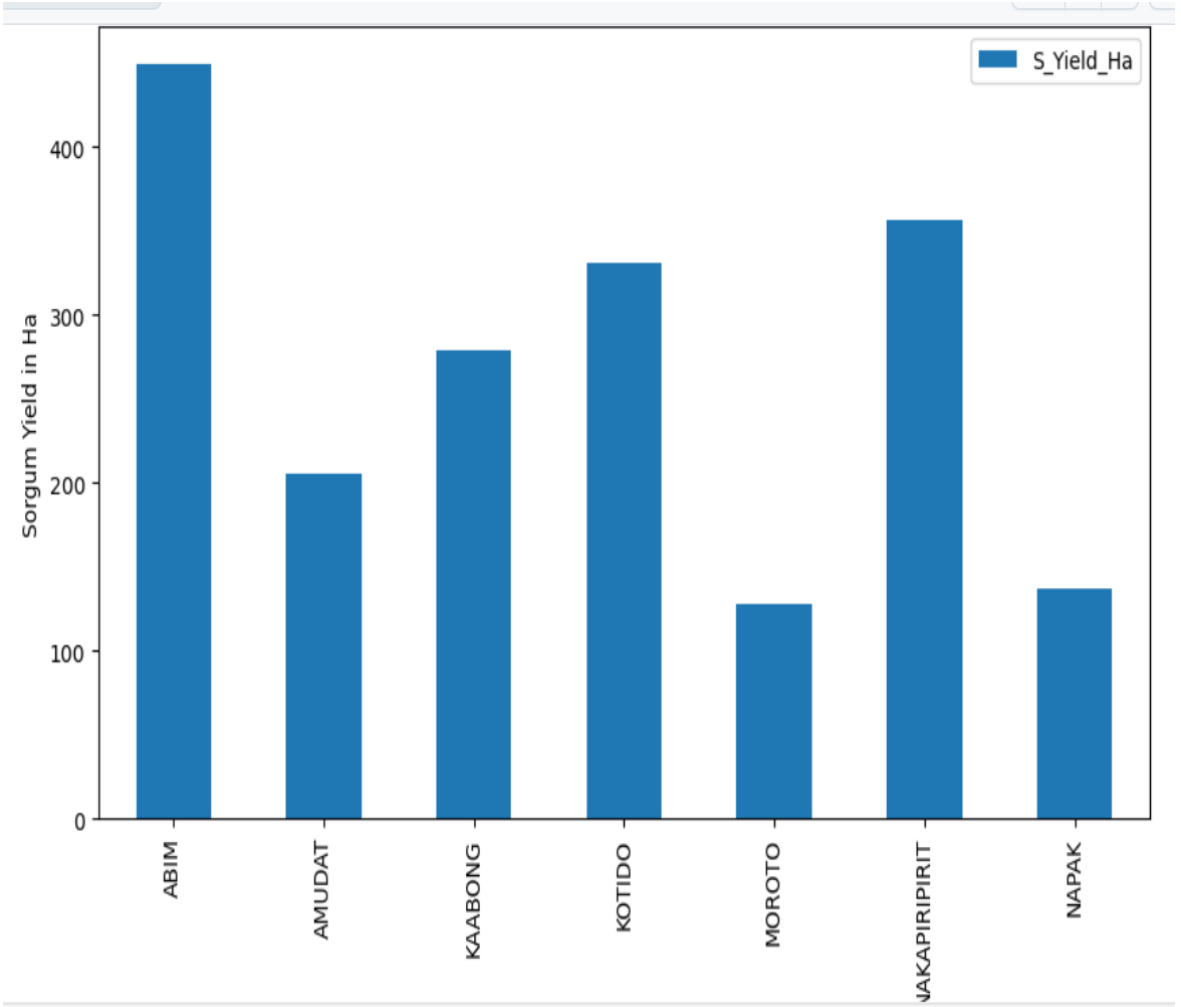
- **Datasets Used:**
  - Uganda districts administrative boundaries
  - Satellite data for maize & sorghum production.
  - Crop yield estimates from 2017.
- **Methodology:**
  - How different administrative levels (district) are incorporated.
  - Tools & technologies used are Python and Tableau

5. Key Findings & Data Insights

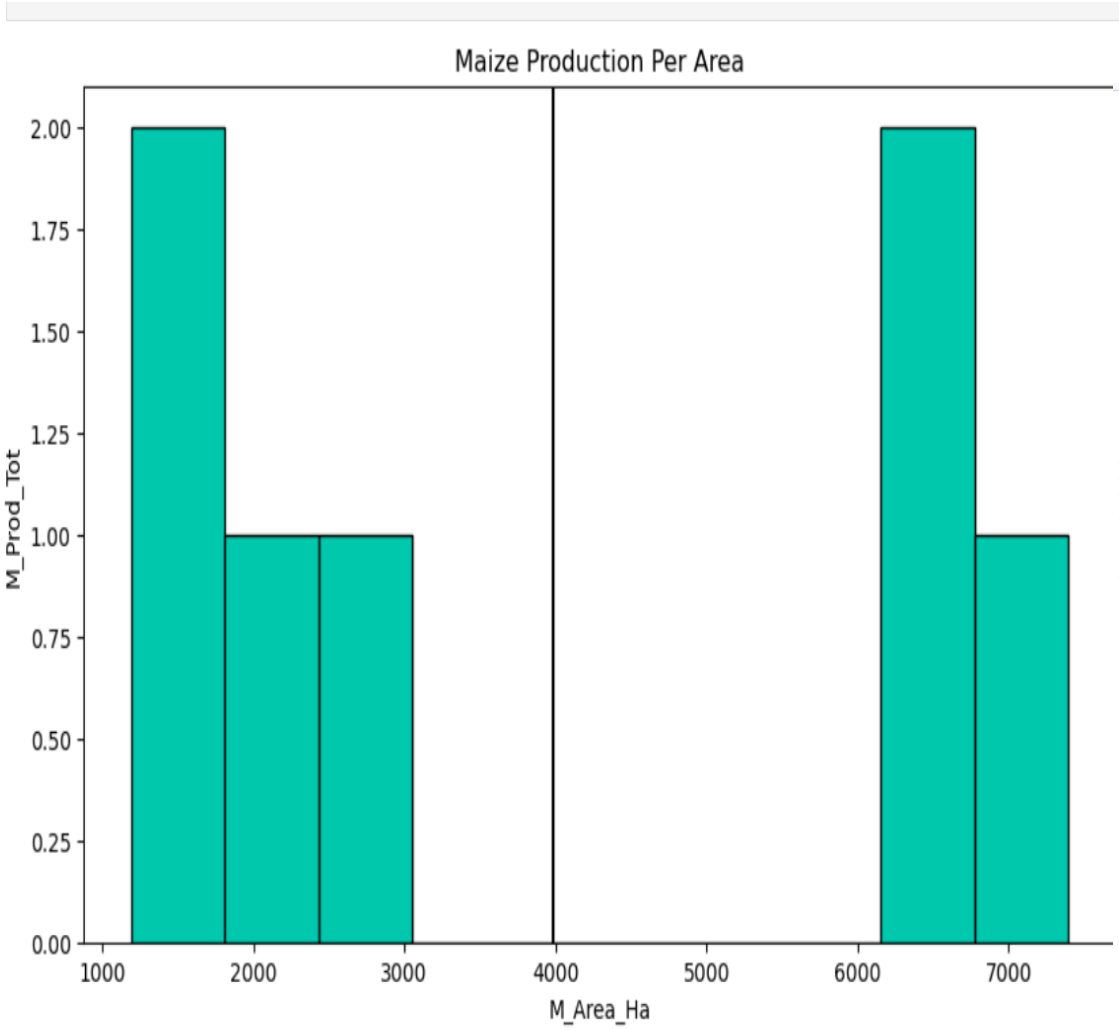
- **Comparison of Sorghum vs. Maize Production**
    - Mean, median, and standard deviation of cultivation areas.
    - Identify regions with high/low productivity.
- **Visualization of Crop Distribution**
    - Districts with highest and lowest yields.
    - Patterns of food Maize and Sorghum production per District.

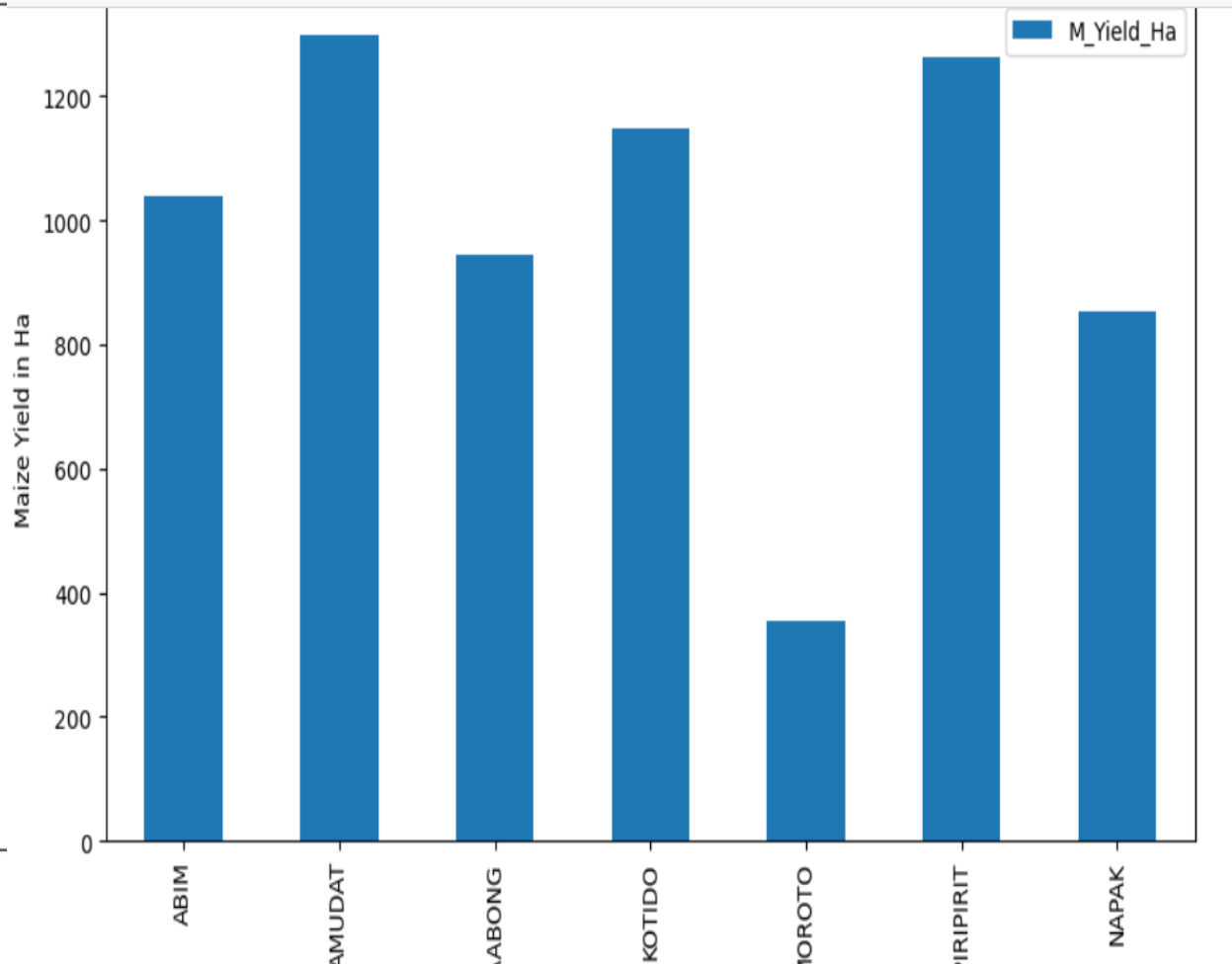
Sorgum Production per Area and Per District





Maize Production Per Area and Per District





7. Recommendations

- Prioritize intervention in low-yield areas.
- Allocate resources effectively (inputs, training, financial aid).
- Monitor trends over multiple seasons.
- Add more crop types in the future
- Ensure to incorporate weather impact analysis in the future.

Appreciation

- I would like to take this opportunity thank you all for Listening to my presentation