Cultivating Resilience in Karamoja - An Agricultural Production Analysis

Informing Targeted Interventions for Food Security

FINAL PROJECT

Agenda

- Overview
- Business Understanding
- Data Understanding
- Data Analysis
- Recommendations
- Conclusion




Overview

- Karamoja is Uganda's most food-insecure region.
- Low crop productivity is a major driver, caused by factors like intense drought and pest outbreaks.
- Our goal: To provide NGOs and government bodies with a data-backed blueprint to focus technical support and resources where they are needed most.

Business Understanding

Food Insecurity in Karamoja

- To help NGOs provide technical support and prioritize interventions
- Present a comprehensive data-driven insights to assess food security patterns and inform targeted interventions.

Data Understanding

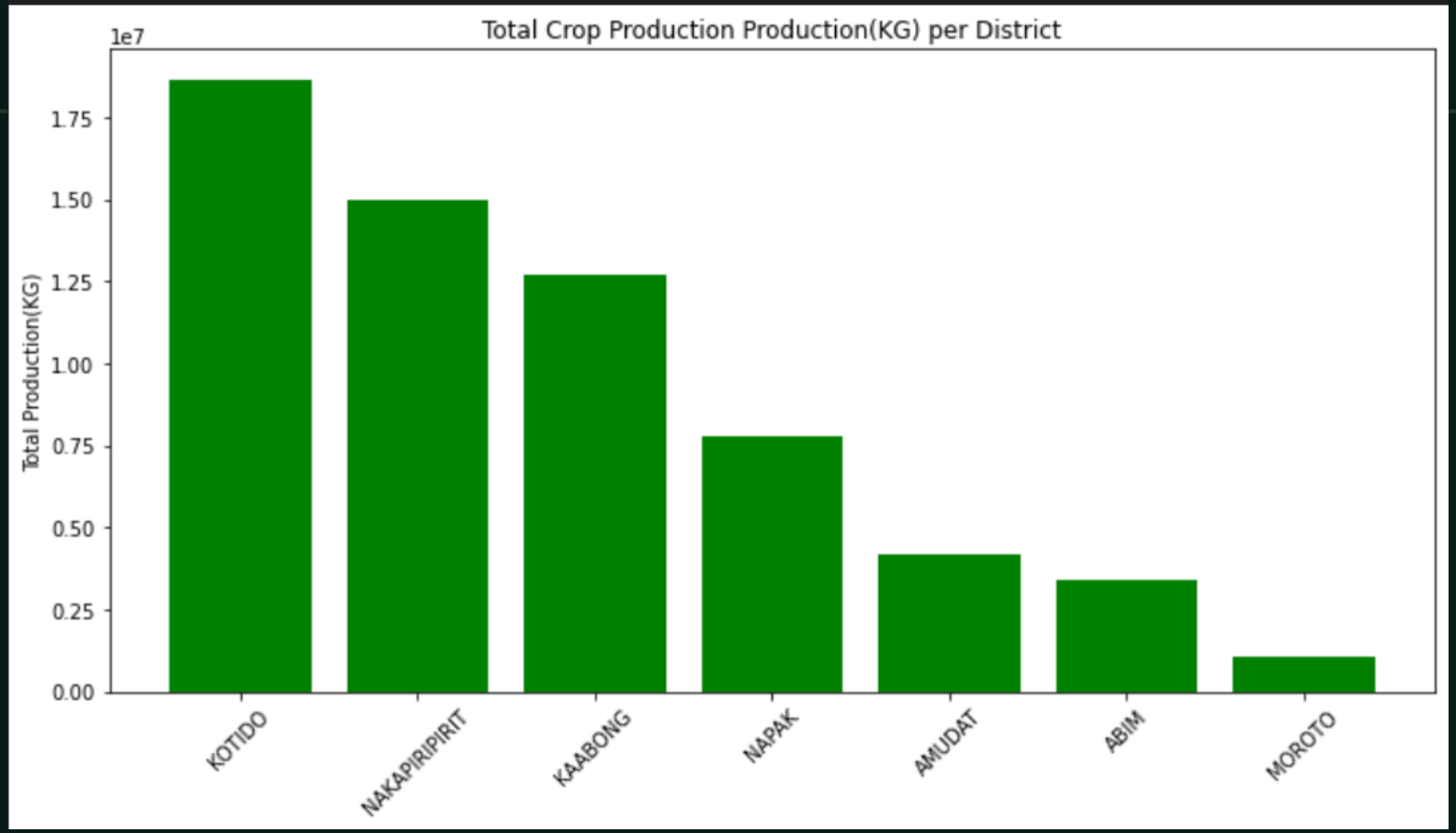
Data Sources:
- District and Sub-county CSV files
- Shapefiles

Coverage:
- 7 districts
- 52 sub-counties
- Population, yields, and production

Data Analysis

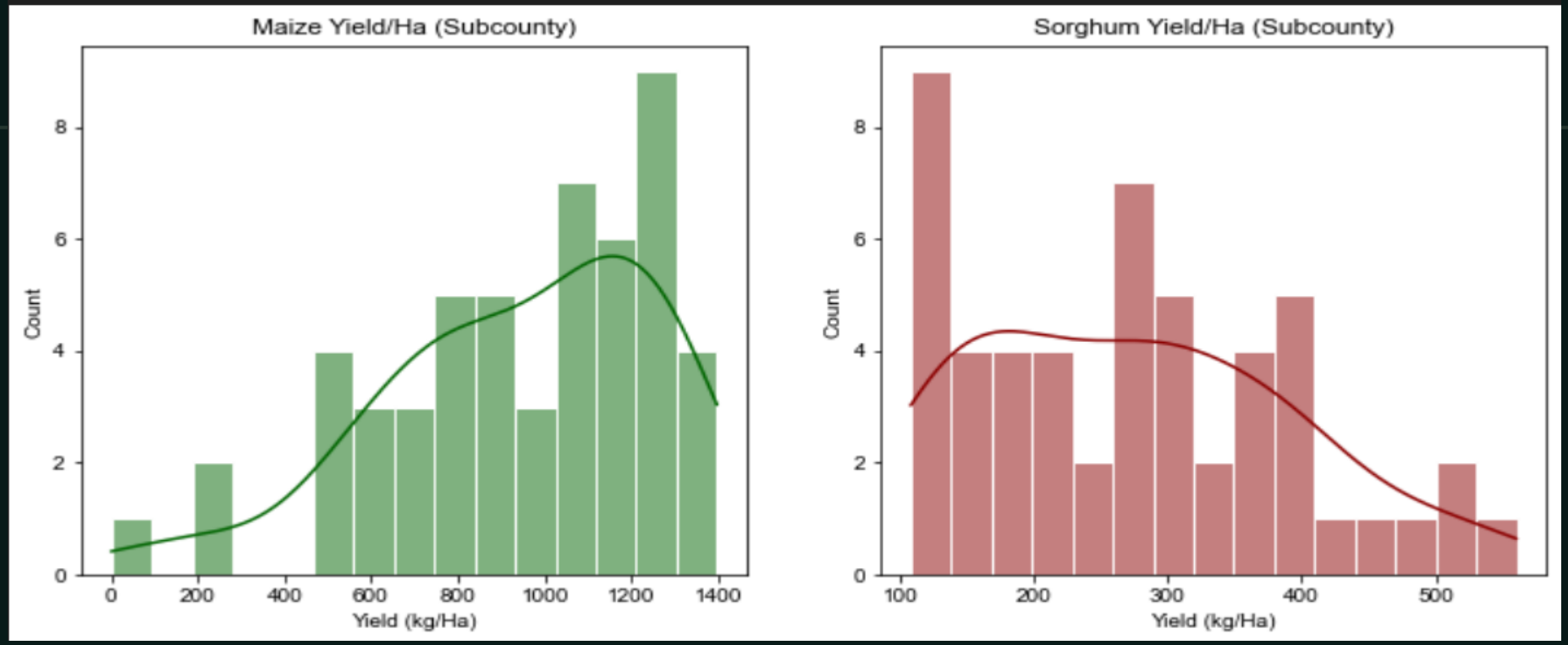
- We used Python and Pandas to clean and analyze data.
- Visualizations were created using Matplotlib and Tableau.
- Key analyses included:
    - Production comparison
    - Yield distributions
    - Correlation analysis

Total Crop Production by District



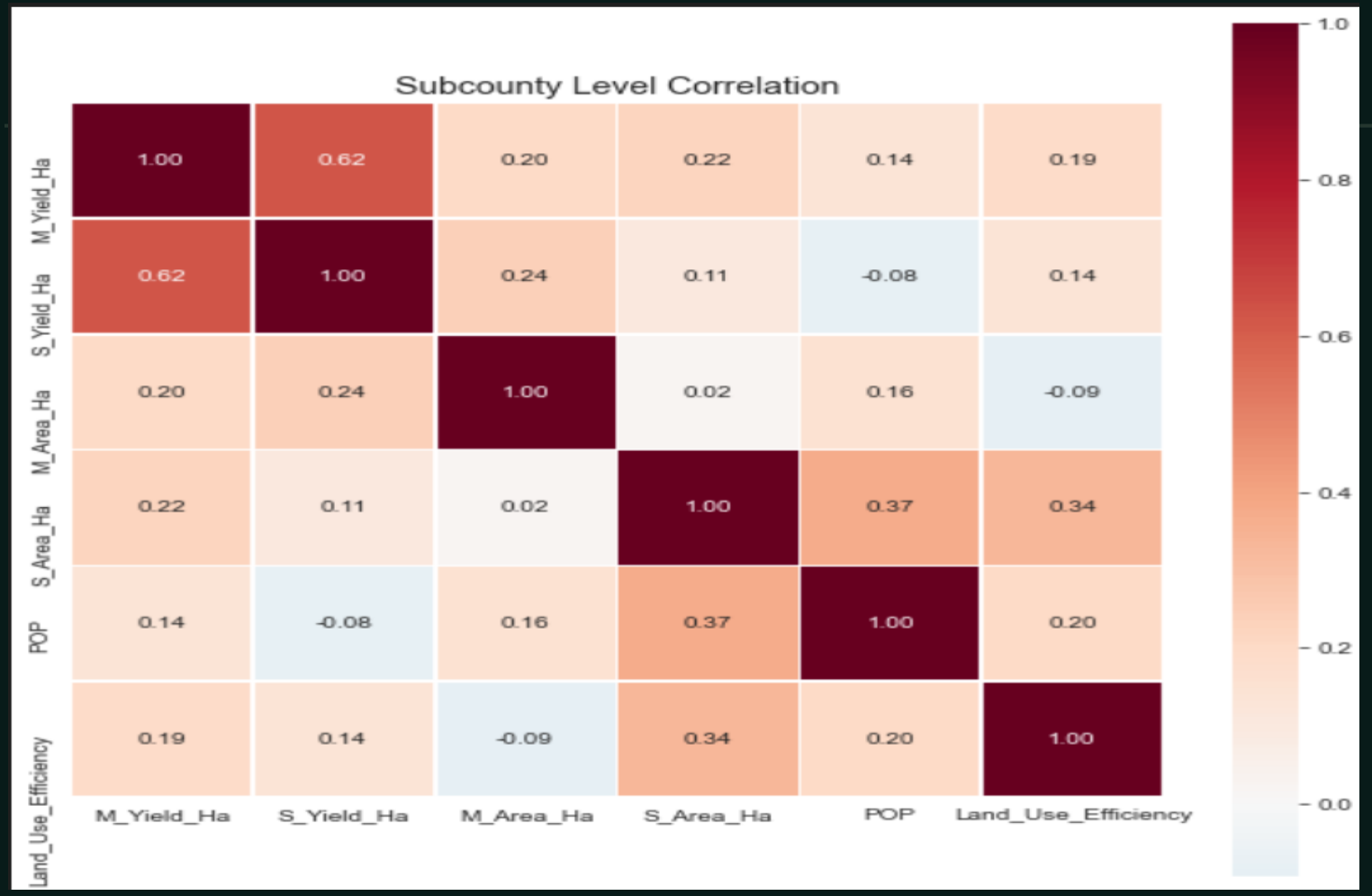
Insight: Kotido leads, Moroto performs dismally.

Relative Yield Distribution



- Maize yield has a positive distribution while sorghum has a negative distribution.
- This implies maize production is well established in most areas.

Correlation of Data



Insight:

- Weak link between population and land efficiency.

- Maize and sorghum yields have a relatively strong correlation, implying both cereals tend to perform well in the given conditions.

Tableau Dashboard

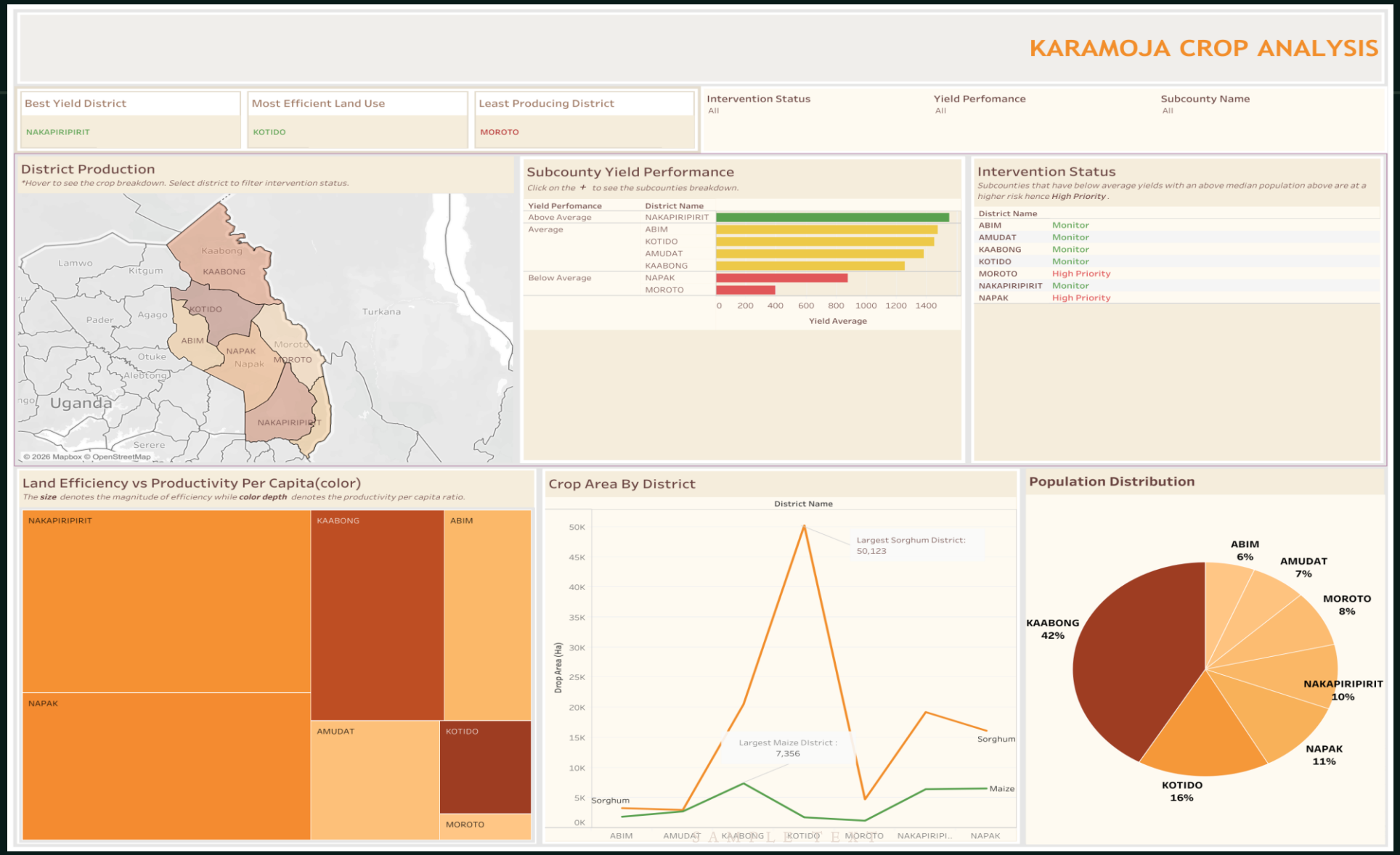


Tableau Insights

- Moroto district should be a top priority in the as the intervention status places all its districts under high priority level.
- Sorghum is always cultivated on a bigger land mass than maize.
- The most land-use efficient district, Nakapiripirit, has quite a low per capita productivity while the inverse is true for Kotido.

Recommendations

1. Prioritize intensive interventions in Moroto district.
2. Launch sorghum improvement programs across all sub-counties.
3. Expand agricultural training initiatives region-wide.
4. Establish ongoing per capita production monitoring.

Future Development

1. Add multi-year data
2. Track impact of interventions
3. Develop predictive models

Question?

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Thank you!