BUSINESS REPORT

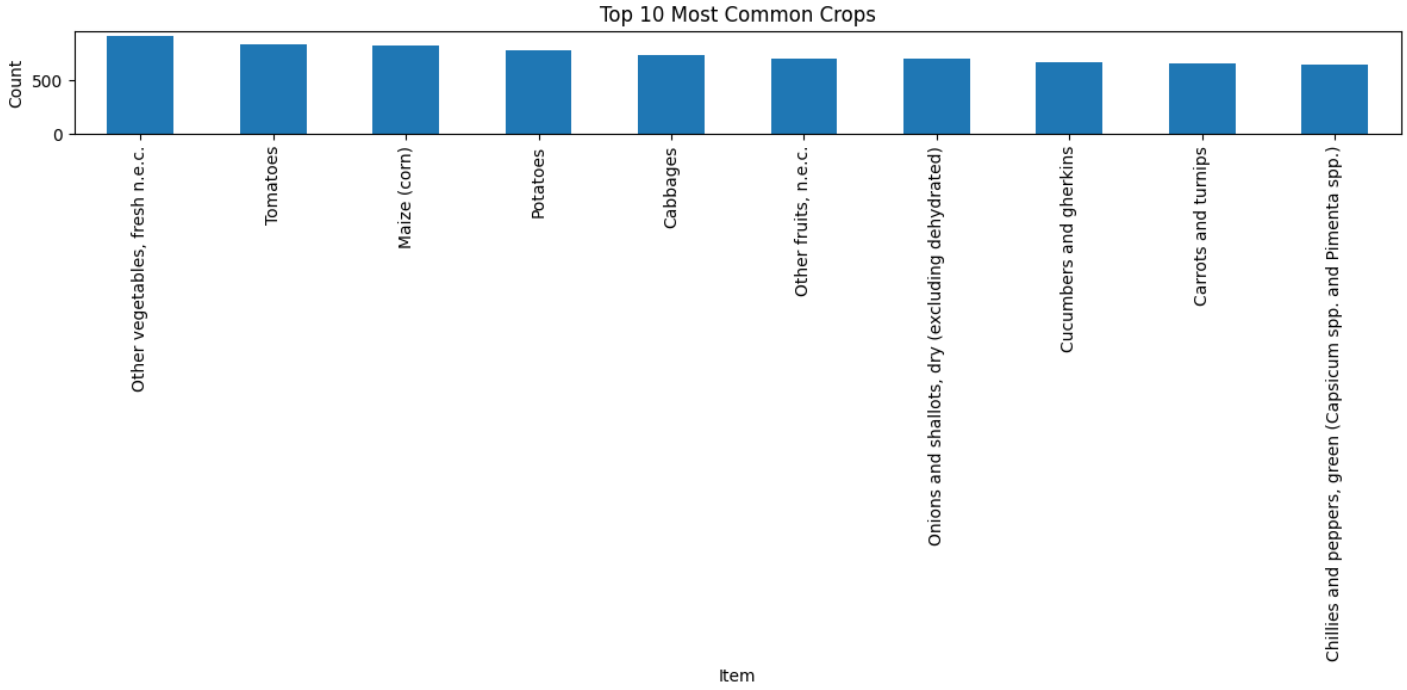
Crop_Production

June 06, 2025

GOKULNATH D

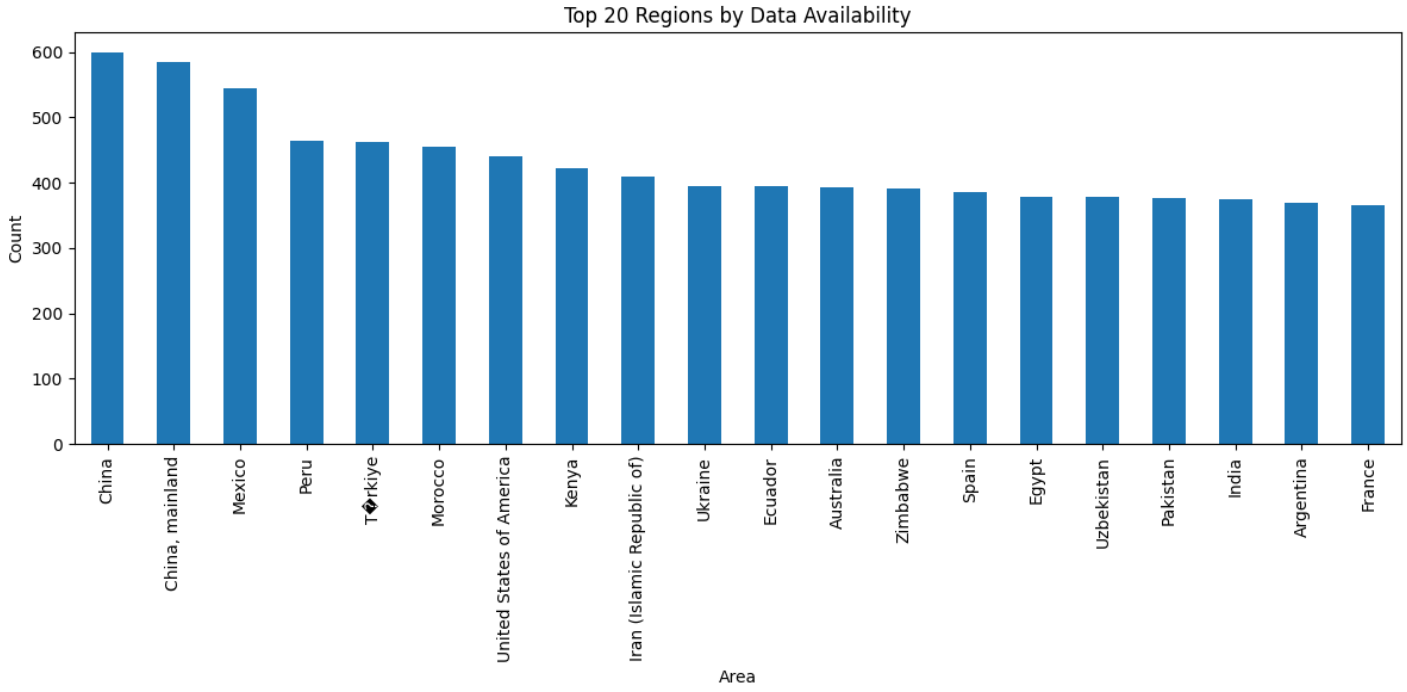
Guvi Assignment

I. Analyse Crop Distribution



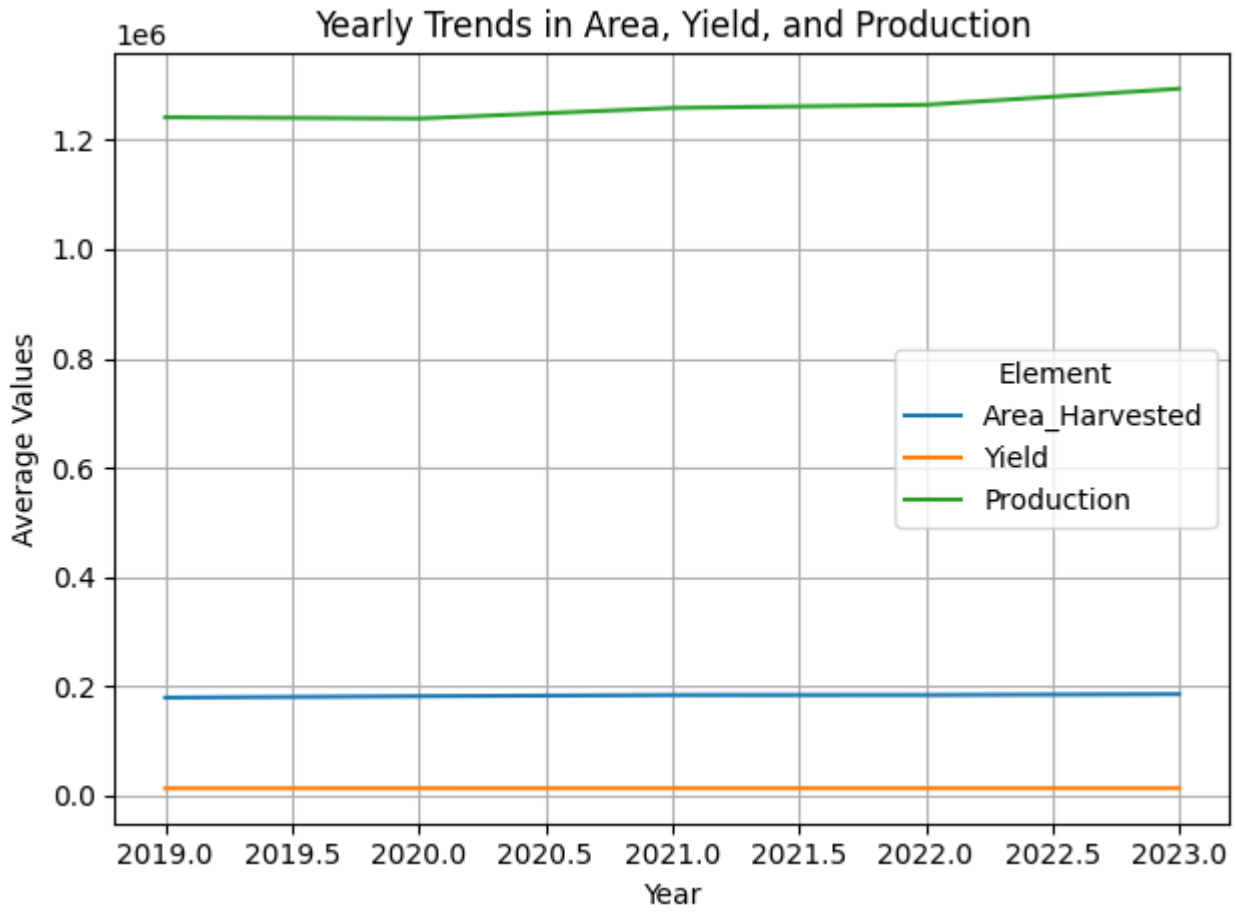
- This chart identifies the most frequently reported or common crops. "Other vegetables, fresh n.e.c." is the most common, followed by Tomatoes, Maize (corn), and Potatoes.
- These are likely high-volume crops.

II. Geographical Distribution



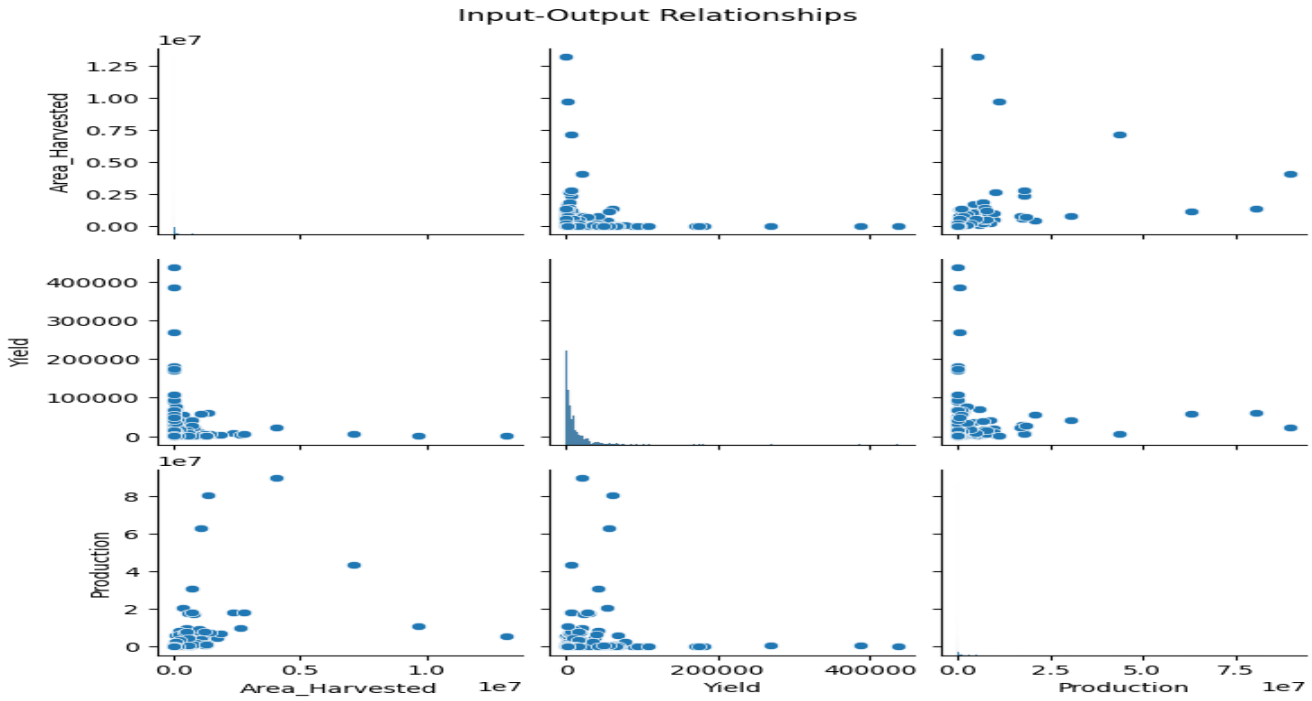
- This chart shows the regions having the most available data. China and China, mainland lead significantly, followed by Mexico, Peru, and Türkiye. India is also in the top 15.

III. Yearly Trends in Area, Yield, and Production



- This graph shows trends from 2019 to 2023 for "Area_Harvested," "Yield," and "Production." "Production" shows a slight upward trend, while "Area_Harvested" and "Yield" appear relatively stable or show very minor fluctuations.

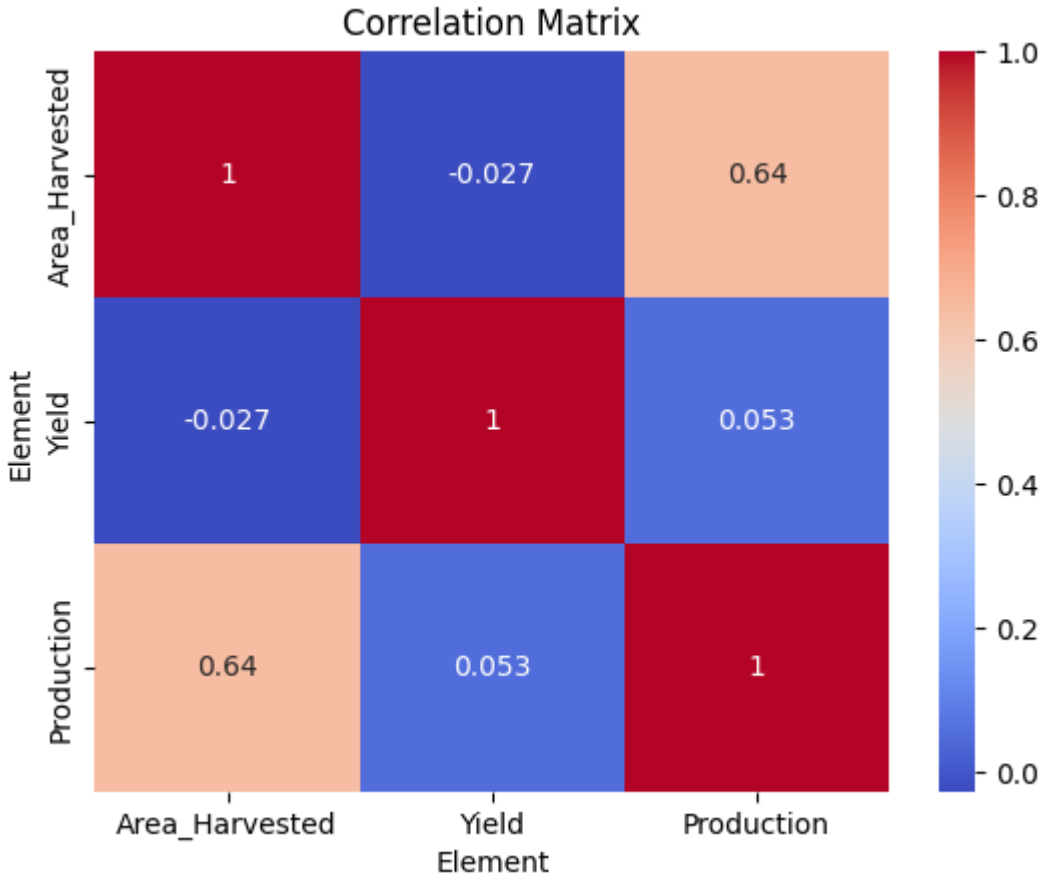
IV. Input-Output Relationships



This matrix shows the relationships between "Area_Harvested," "Yield," and "Production."

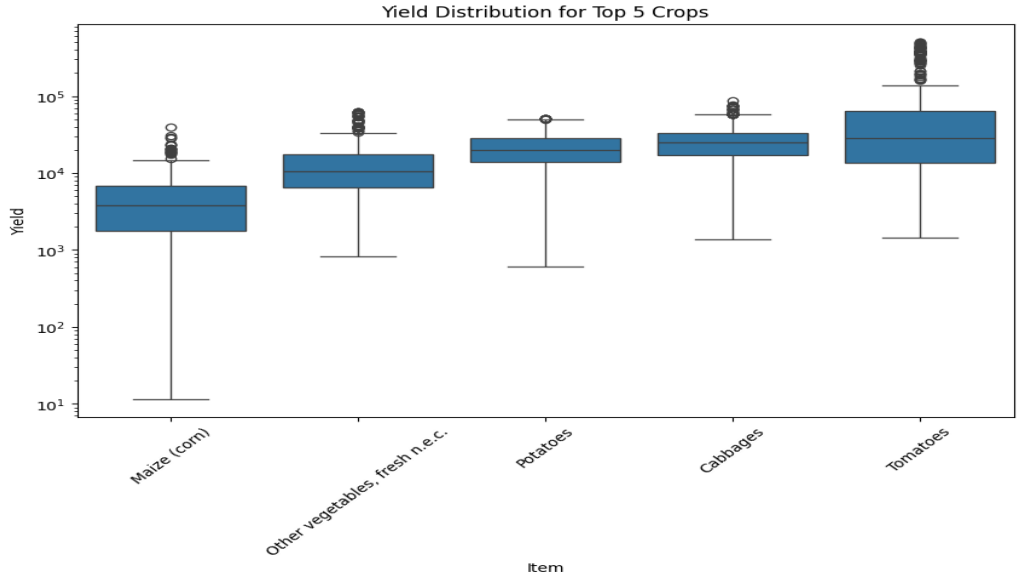
- "Production" appears to have a positive correlation with "Area_Harvested" and "Yield."
- The distributions show several outliers or data points with high values, especially for "Production."
- The "Yield" histogram shows a heavy concentration at lower values with a long tail of higher values.

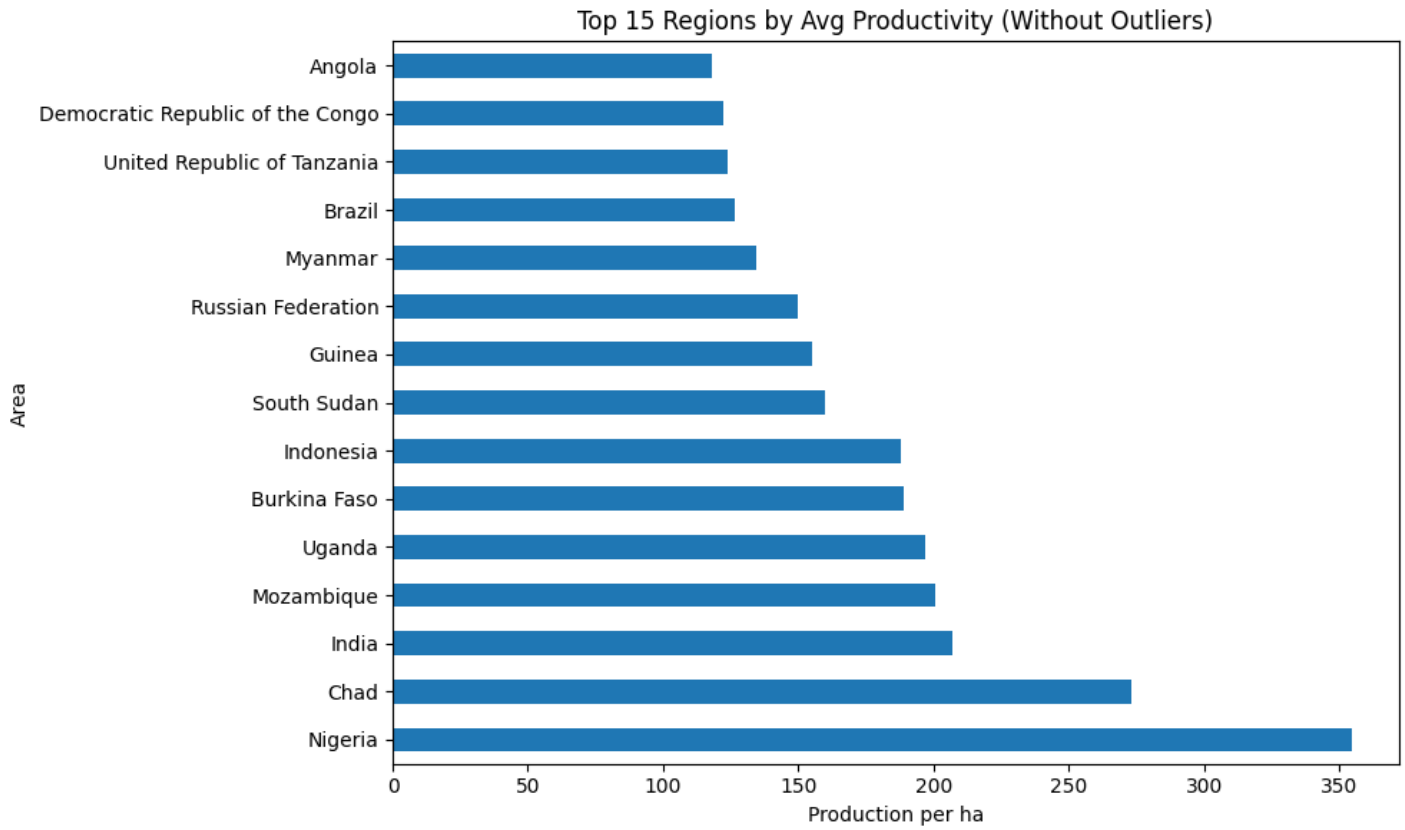
V. Correlation Matrix (Heatmap)



- "Area_Harvested" and "Production" have a strong positive correlation (0.64).
- "Yield" and "Production" have a very weak positive correlation (0.053).
- "Area_Harvested" and "Yield" have a weak negative correlation (−0.027).

VI. Yield Distribution for Top 5 Crops





- This box plot shows the distribution of "Yield" for the top 5 crops (Maize, Other vegetables, Potatoes, Cabbages, Tomatoes) on a logarithmic scale. Tomatoes and Cabbages appear to have higher median yields and wider ranges compared to Maize, which has a lower median yield but a very long tail of outliers.
- This chart ranks regions by "Production per ha" (hectare), excluding outliers. Nigeria, Chad, and India are the top three in terms of average productivity.

Business Insights:

- Businesses involved in processing, distribution, or supplying inputs for these crops might find this data useful for market sizing and strategic planning.
- The prevalence of "Other vegetables, fresh n.e.c." suggests a diverse vegetable market beyond specific named crops, which could indicate opportunities for niche markets or specialized produce.
- These regions are highly productive per unit of land, suggesting efficient agricultural practices or favorable conditions. This could attract investment in farming, processing, or related agricultural services.
- These regions might be excellent sources for raw agricultural commodities due to their high productivity.
- High productivity per hectare is crucial for sustainable agriculture, especially in the face of limited arable land.
- Businesses involved in farming or agricultural investments can use this to compare potential yields across different common crops.
- Understanding yield distribution can inform targeted research and development into practices or technologies that push yields higher for specific crops (e.g., understanding what factors contribute to the high outliers in Maize).
- The strong correlation between "Area_Harvested" and "Production" suggests that increasing the area under cultivation is a primary way to boost overall production.

- Visually reinforces that both the area cultivated and the yield per unit area are crucial drivers of overall production.