

# Impact of Temperature Change on Agricultural Productivity in European Countries

---



**PRESENTED BY:**  
MD NUR HOSSAIN  
BHUIYAN



**DATE:**10-07-2024

# Introduction

---

**Objective:** Assess the impact of temperature change on agricultural productivity in European countries.

**Focus:** Investigate the relationship between temperature changes and food production values over the past few decades.

# Data Sources

---

**Temperature  
Change Data:**

Source: FAOSTAT

Coverage: 1961 to  
2022

Details: Annual  
temperature change  
values for various  
European countries.

**Food Production  
Data:**

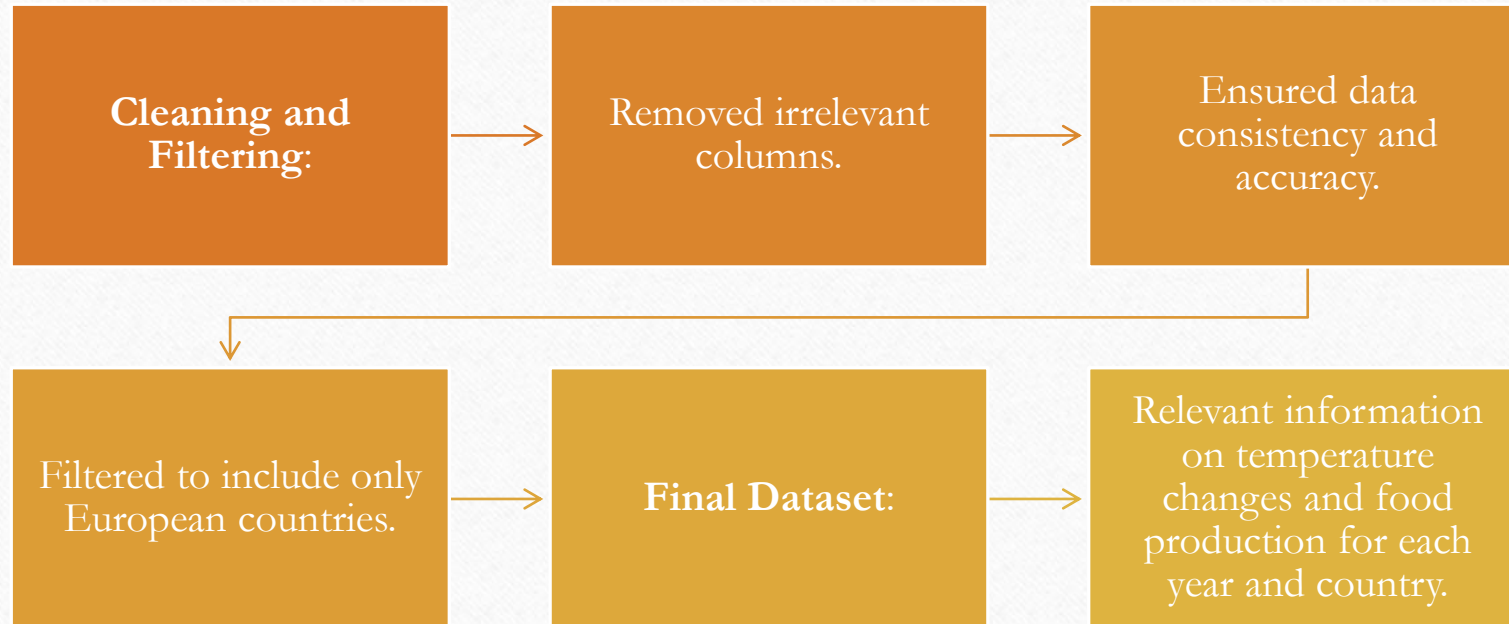
Source: Kaggle  
(Global Food and  
Agriculture  
Statistics)

Coverage: Similar  
period to  
temperature data

Details: Annual food  
production values  
for European  
countries.



# Data Processing



### **Grouped Bar Chart:**

Compares normalized average temperature change and food production across countries.

### **Scatter Plot Matrix:**

Visualizes relationships between year, temperature change, and food production.

### **Heatmap:**

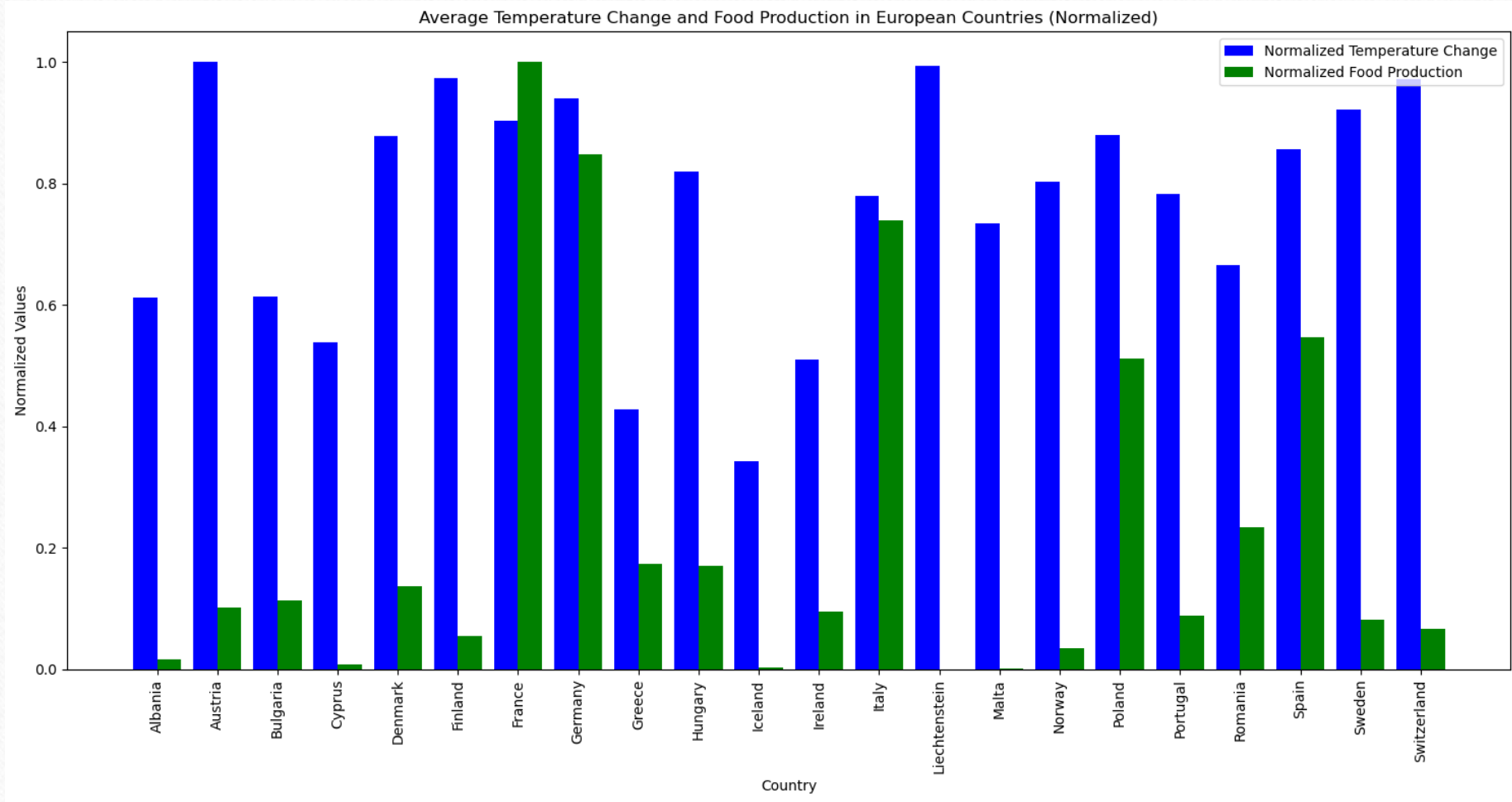
Shows temperature changes and food production over years.

# **Analysis Methods**

# Grouped Bar Chart

- **Findings:**
- Countries like France, Germany, and Italy show high values for both temperature change and food production.
- Denmark and Switzerland show high temperature changes but lower food production values.
- **Interpretation:**
- Significant impact of temperature change on food production in some countries.
- Other factors might influence food production besides temperature change.



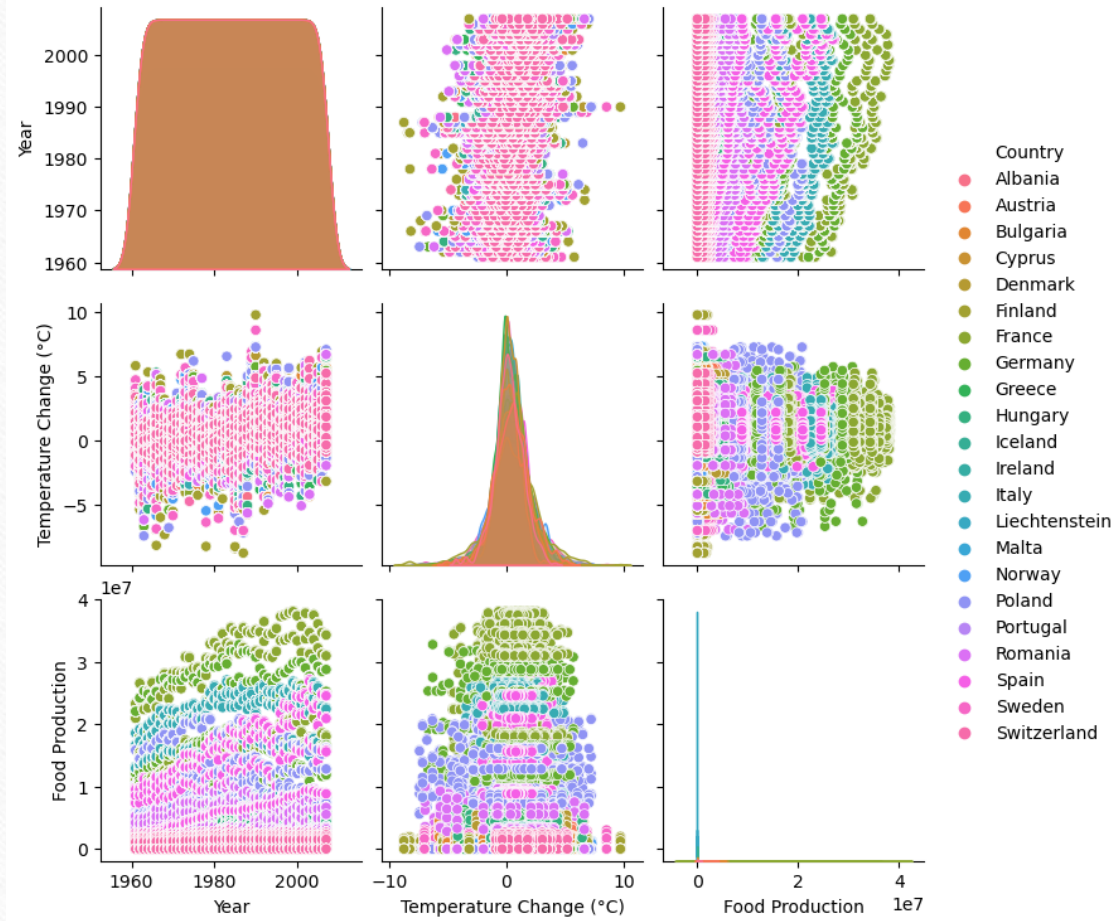


# Scatter Plot Matrix

- **Findings:**
- Lack of clear pattern in temperature change vs. food production scatter plots.
- Temperature changes relatively consistent over time.
- Food production shows more variability.
- **Interpretation:**
- Temperature change may influence food production but is not the sole factor.
- Other environmental, economic, and agricultural practices play significant roles.

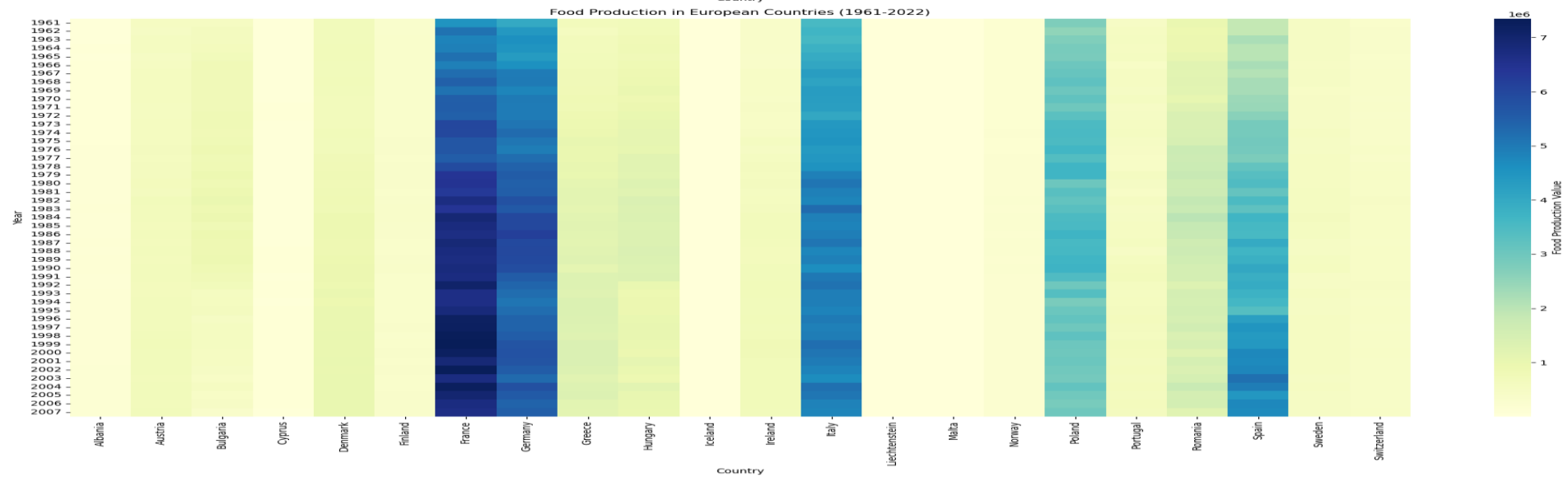
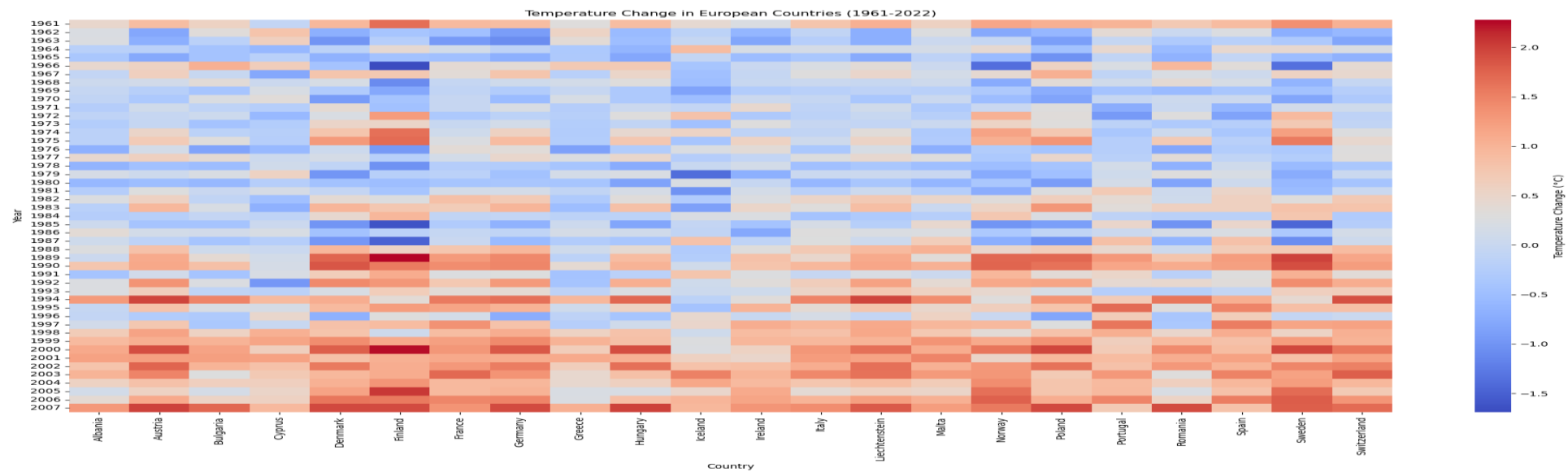


Scatter Plot Matrix of Temperature Change and Food Production for All Countries



# Heatmaps

- **Temperature Change Heatmap:**
- Significant increases in temperature in countries like France, Germany, and Italy.
- **Food Production Heatmap:**
- High food production values in countries such as France and Germany.
- **Comparison:**
- Some correlation between high temperature changes and high food production, but not universal.
- Indicates other influencing factors.





# Conclusion

- **Summary:**
- Some correlation between temperature changes and food production, but relationship is not straightforward.
- Temperature change is one of the factors, not the sole determinant.
- **Uncertainties and Limitations:**
- Data did not capture all variables affecting food production (e.g., soil quality, irrigation practices, policies, economic conditions).
- **Final Thoughts:**
- Relationship between temperature change and agricultural production is complex.
- Need broader approach and more comprehensive data for future research.