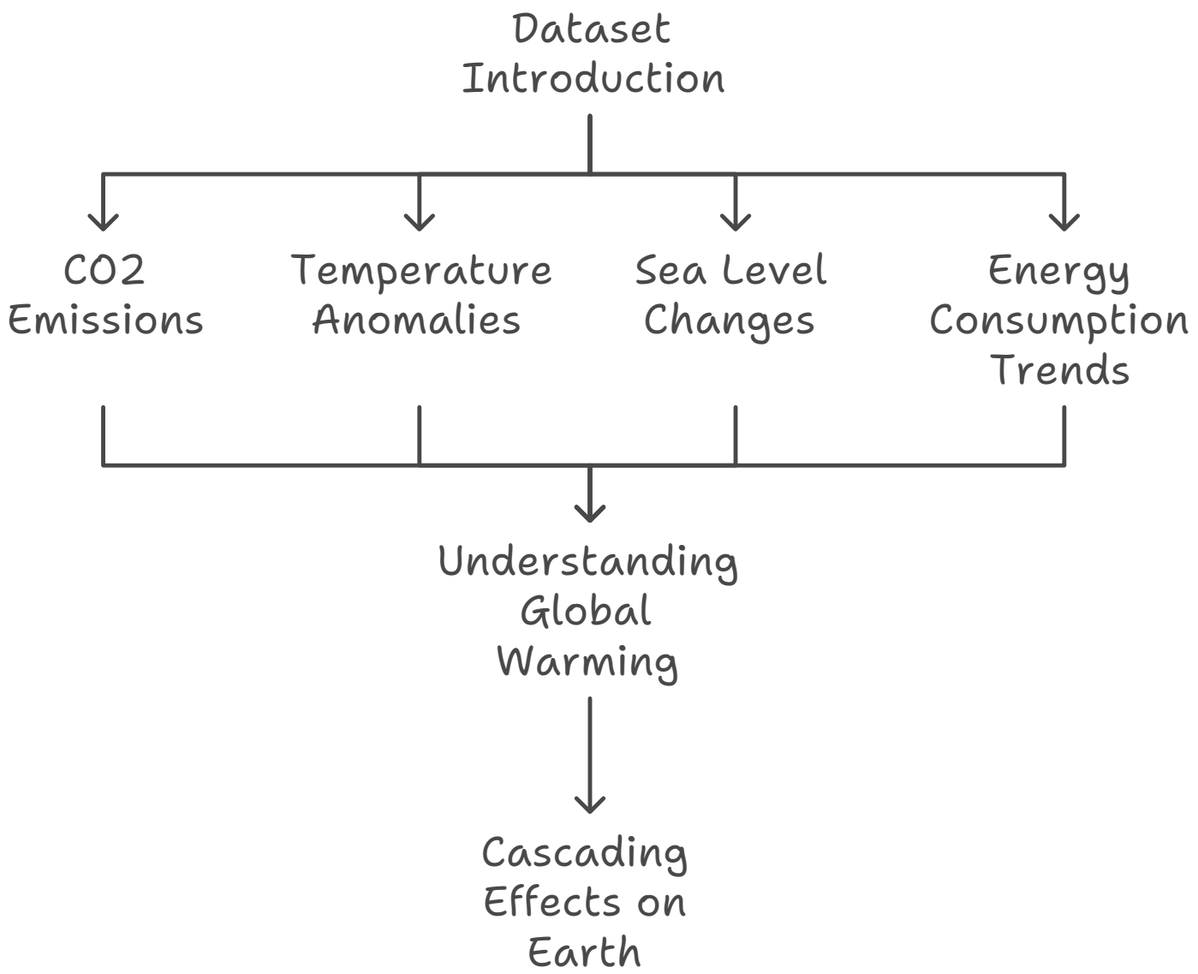
Climate Change Dataset Summary & Domain Insights

Dataset URL: [https://www.kaggle.com/datasets/bhadramohit/climate-change-dataset]**Date:** *[27-06-2025]*

🌍 Domain Overview

This dataset explores various indicators of climate change across the globe. It captures essential environmental metrics such as CO2 emissions, temperature anomalies, sea level changes, and energy consumption trends. The dataset plays a crucial role in understanding the evolving patterns of global warming and its cascading effects on Earth.

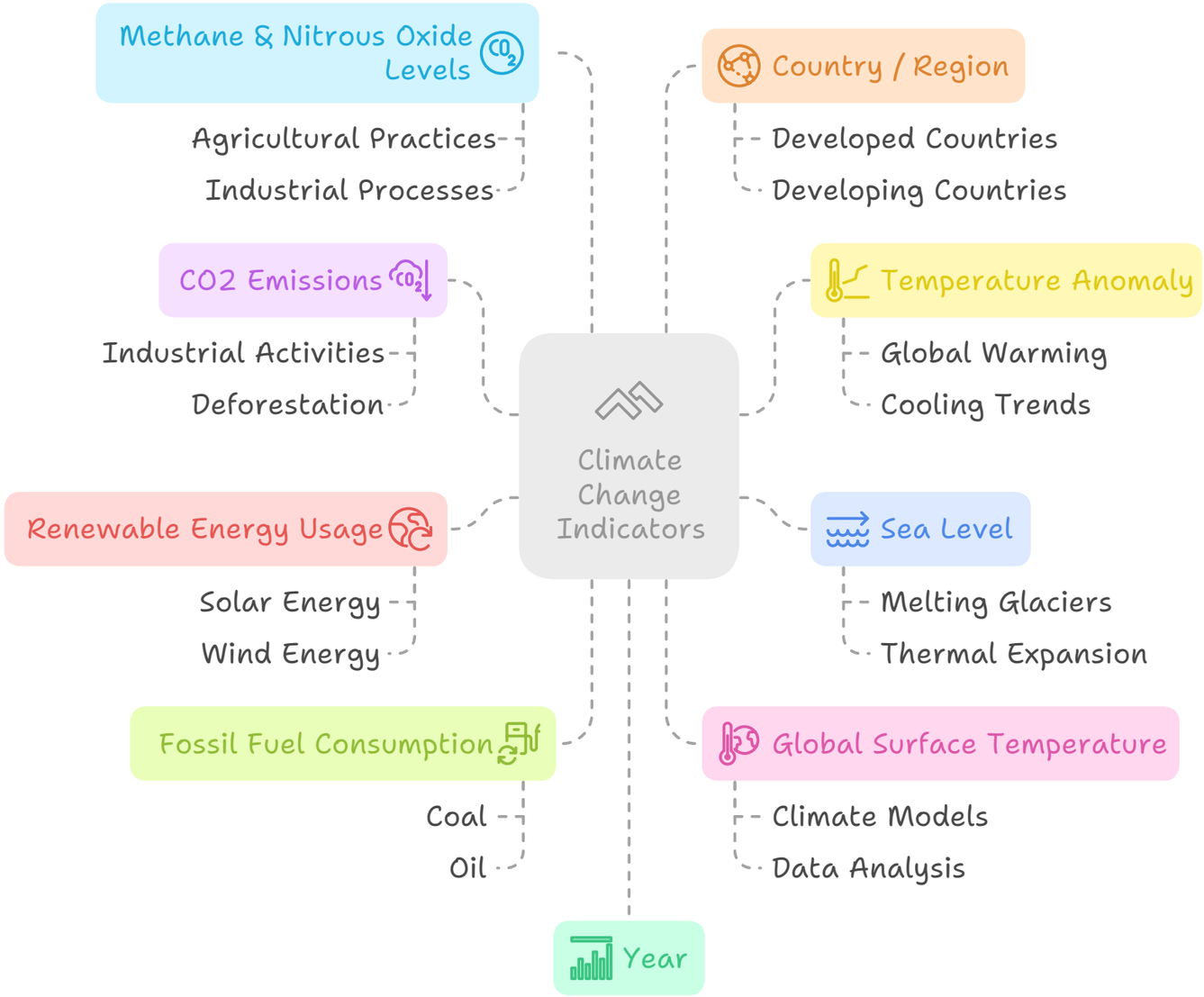
Climate Change Dataset Overview



🔍 Key Variables Identified

- Year – Time-based reference to observe long-term trends
- CO2 Emissions – A key greenhouse gas contributing to global warming
- Temperature Anomaly – Deviation from baseline temperature values indicating warming or cooling
- Sea Level – Tracking ocean expansion due to melting glaciers and thermal expansion
- Renewable Energy Usage – Measure of sustainable energy adoption over time
- Fossil Fuel Consumption – Indicator of human reliance on non-renewable resources
- Global Surface Temperature – Aggregated metric to understand climate trends
- Methane & Nitrous Oxide Levels – Other major greenhouse gases
- Country / Region – Helps in comparative analysis by geography

Climate Change Indicators and Their Relationships



Types of Data

- **Continuous:** CO2 emissions, temperature, sea level, energy usage
- **Categorical:** Country, region, year
- **Time-Series:** Data over years suitable for trend analysis

Data types

Continuous Data

Numerical data that can take any value.

Categorical Data

Data that represents characteristics, not numerical values.

Time-Series Data

Data points indexed in time order.

🎯 Objective of Analysis

- Identify correlations between emissions and temperature rise
- Visualize rate of change in sea level and temperature
- Assess global/regional renewable energy adoption
- Evaluate historical contributions to climate change by country

Climate Change Analysis

Emissions Correlation

Determine the relationship between emissions and temperature increases.

Visualize Change

Display the rate at which sea level and temperature are changing.

Renewable Adoption

Measure the adoption of renewable energy on a global and regional scale.

Historical Contributions

Evaluate each country's past contributions to climate change.

Potential Use Cases

- Climate awareness & education
- Policy impact assessment
- Baseline for simulations & forecasting
- Academic or scientific research

Research components

Climate awareness

Educating people about climate change issues.

Policy assessment

Evaluating the impact of current climate policies.

Simulation baseline

Establishing a baseline for climate simulations.

Scientific research

Conducting academic research on climate.

📚 Conclusion

The **Climate Change dataset** is a vital resource for understanding our planet's transformation. It provides a robust foundation for visual storytelling, encouraging informed decisions and climate action across sectors.