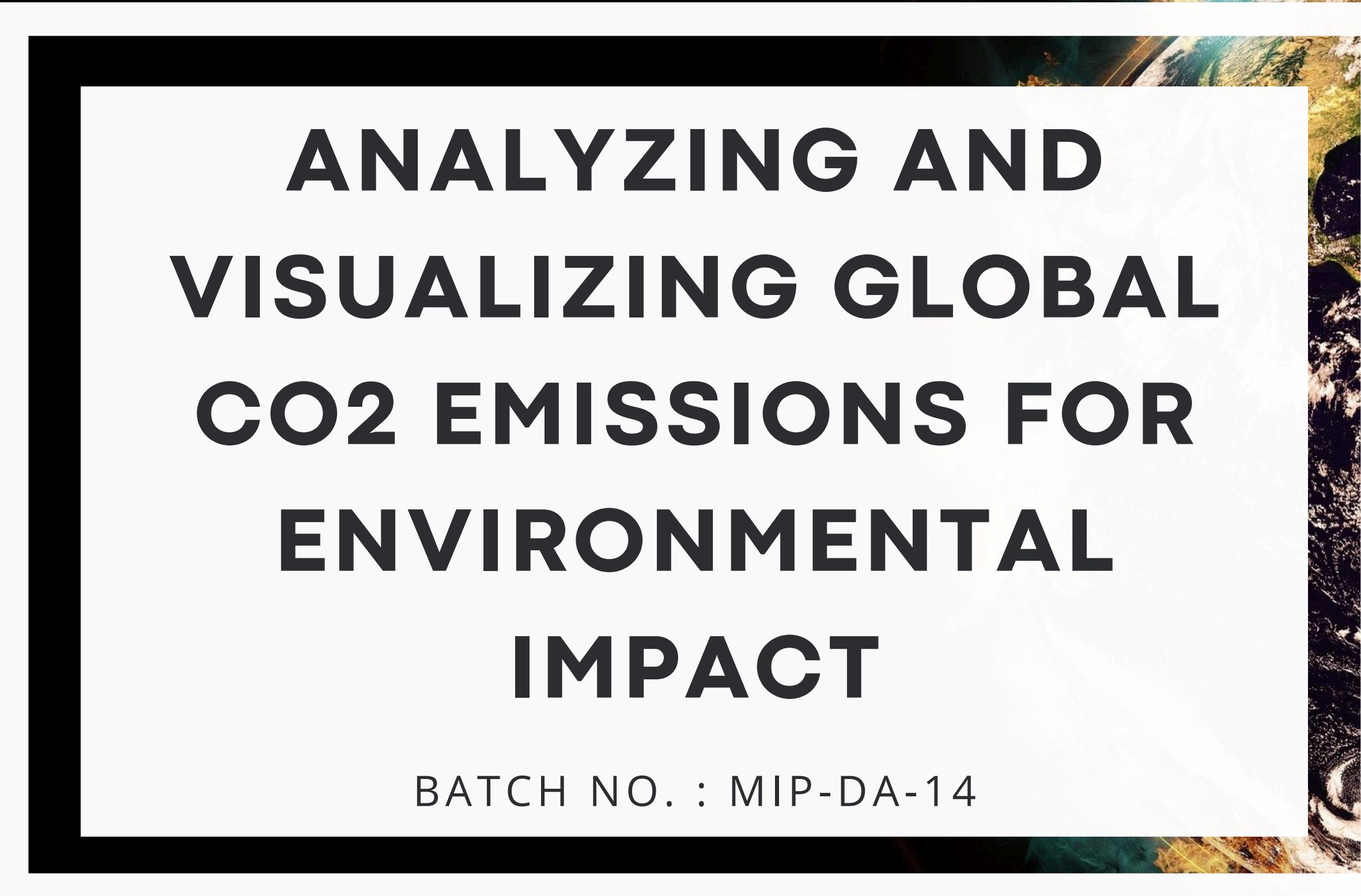


ANALYZING AND VISUALIZING GLOBAL CO₂ EMISSIONS FOR ENVIRONMENTAL IMPACT

BATCH NO. : MIP-DA-14





Introduction

This project, Analyzing and Visualizing Global CO2 Emissions for Environmental Impact, aims to address this challenge by creating an interactive and insightful dashboard using Power BI. The dashboard visualizes complex CO2 emissions data, making it accessible and understandable for key stakeholders such as policymakers, researchers, and the general public. By providing an in-depth analysis of emission trends, pinpointing the largest contributors (including countries, sectors, and industries), and enabling comparative analysis across regions, this project seeks to support efforts in crafting effective policies and actions that can combat climate change.

Objective

- **Simplify Complex Data:** Present global CO2 emissions from multiple sources, sectors, and regions in an intuitive and interactive format.
- **Trend Analysis:** Identify and analyze long-term emission trends to evaluate the effectiveness of environmental policies and initiatives.
- **Key Contributor Identification:** Pinpoint major contributors to CO2 emissions, including countries, industries, and activities, to guide targeted interventions.
- **Impactful Visualization:** Design clear, visually appealing representations of emissions data that foster awareness and drive climate action among various stakeholders.
- **Comparative Analysis:** Provide tools to compare emissions across countries, sectors, and regions, highlighting disparities and successful practices to inspire better policy development and environmental strategies.

A photograph of an industrial facility at dusk or night. Several tall chimneys are emitting thick plumes of dark smoke and steam into a blue-tinted sky. The scene is dimly lit, with some warm light reflecting off the smoke and the tops of the chimneys.

Approach

Data Preparation:

- Cleaning and structuring the data for analysis.
- Handling missing values, outliers, and ensuring consistency.
- Analysis Approach:

Exploratory Data Analysis (EDA): Initial examination of the data to uncover key trends.

- Trend Analysis: Visualizing emissions over time for major regions.
- Key Contributor Identification: Breaking down emissions by countries and industries.
- Comparative Analysis: Using filters and visual elements to compare regions.

Tools Used:

- Power BI for interactive visualization and analysis.

Global CO2 Emissions for Environmental Impact

12.54M

Total Emissions

High-income countries

Top Emitters

51.09

Avg Annual Growth Rate

year

1750

1751

1752

1753

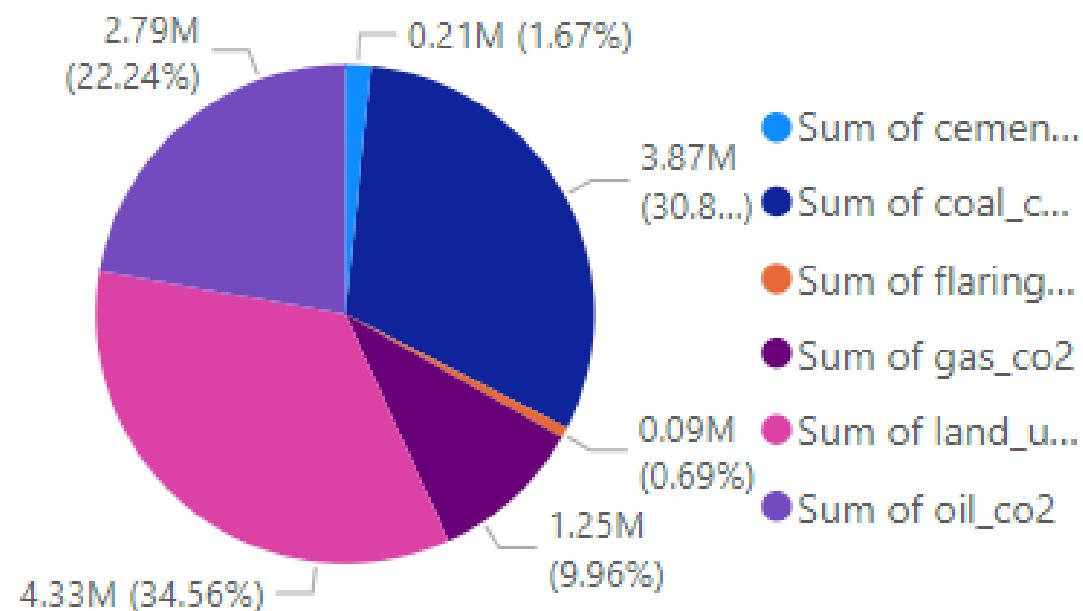
country

Afghan...

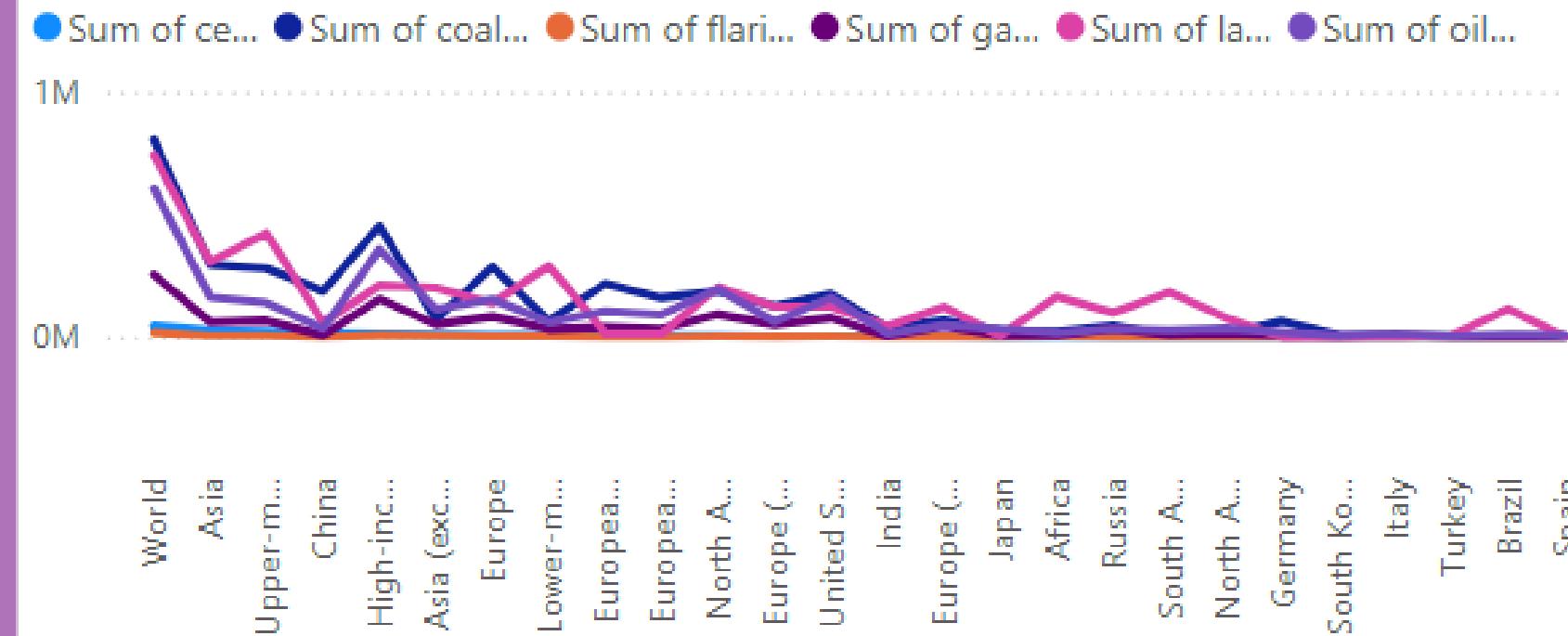
Africa

Africa...

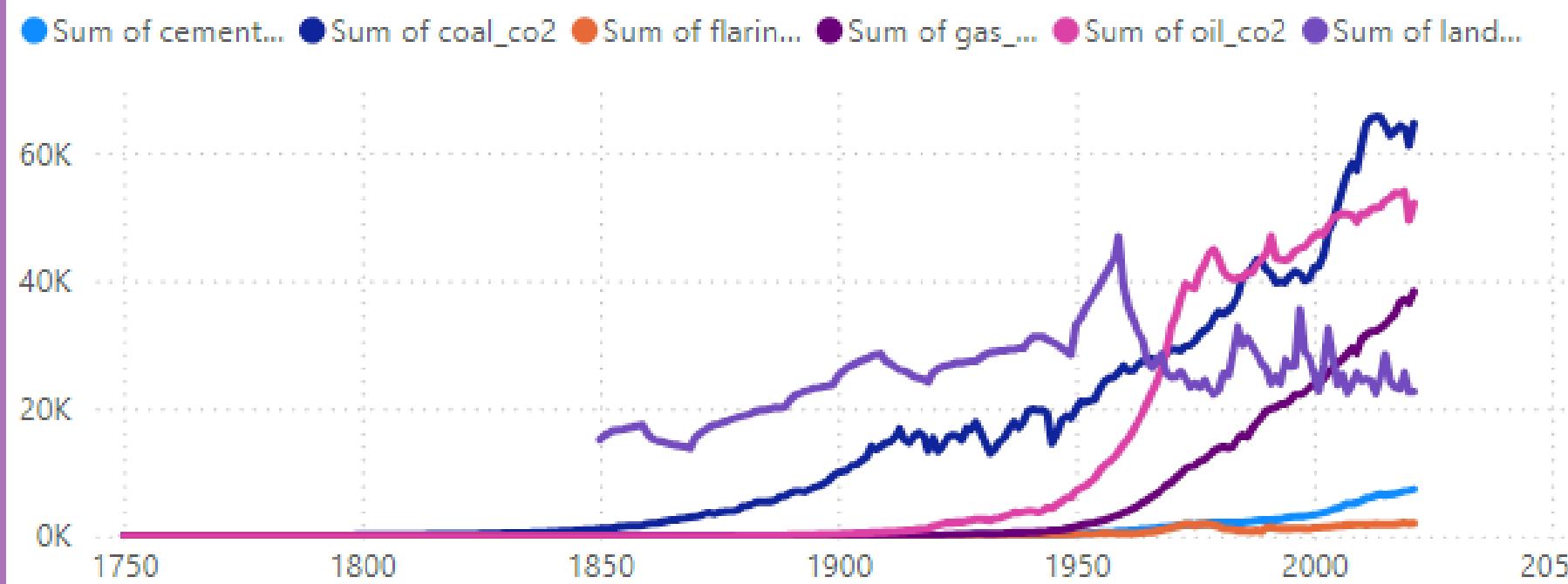
Different types of CO2 Emission



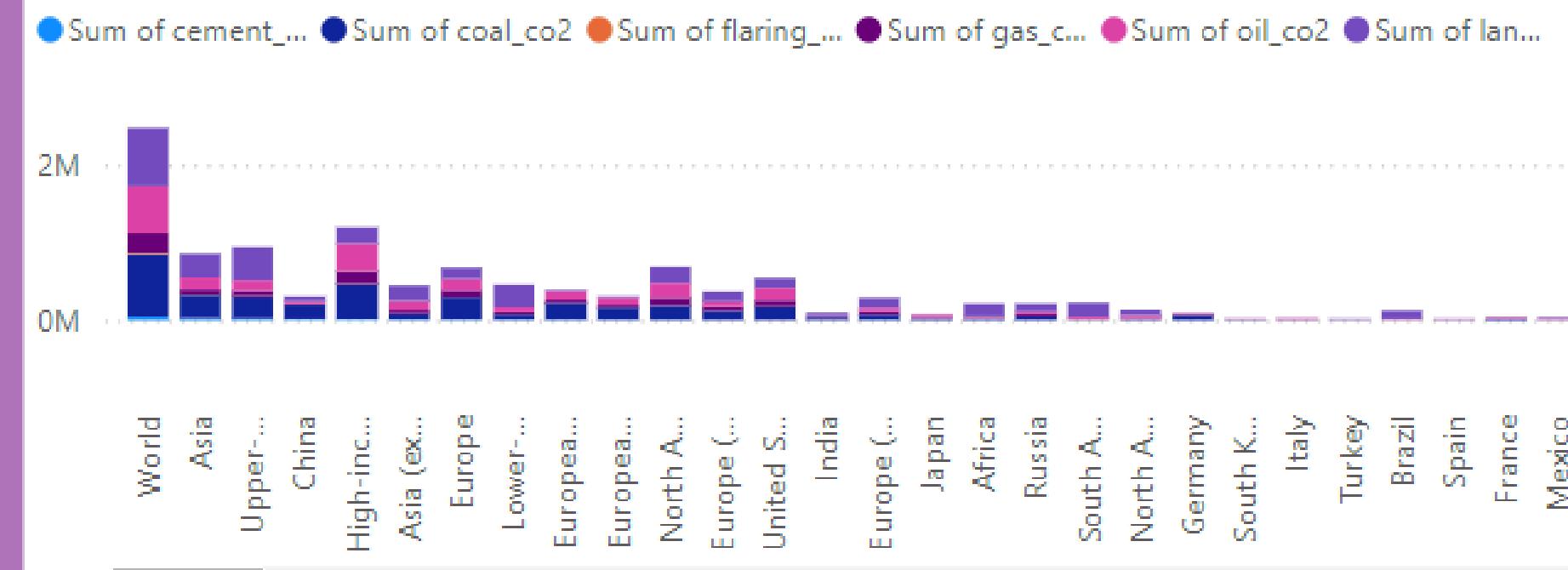
Geographical Emission of CO2



CO2 Emission Over Time



Top Contributors



Insights

- Over the past several decades, global CO2 emissions have been on a steady rise, signaling an urgent need for stronger climate action.
- China, India, and the USA consistently emerge as the top emitters, together accounting for a substantial share of total global emissions.
- Over recent years, the average annual growth rate of CO2 emissions has been alarming, showing a 51.09% increase.
- The coal sector continues to play a dominant role in global CO2 emissions, particularly in countries like China and India.



Recommendations:

- Prioritize investments in renewable energy sources like solar, wind, and hydroelectric power to replace fossil fuels.
- Strengthening international climate agreements and enforcing stricter national emissions targets is essential.
- Encourage innovation and the development of low-carbon technologies in these industries. Carbon capture and storage (CCS) technology should also be explored to mitigate emissions from unavoidable sources.
- Incentivizing the adoption of energy-efficient technologies, such as electric vehicles and energy-saving infrastructure, will lead to long-term reductions in CO₂ output.
- Implementing carbon pricing, such as carbon taxes or emissions trading schemes, can create economic incentives for businesses and industries to reduce their carbon footprints.
- Organizations should invest in education and awareness campaigns to help citizens understand the urgency of reducing emissions and inspire them to adopt more sustainable lifestyles.





A satellite-style aerial photograph of a coastal region. A prominent, dark, swirling plume extends from a point on the coast towards the ocean, suggesting a major environmental event like an oil spill or a large fire. The surrounding land is a mix of brown, green, and yellowish tones, indicating different types of vegetation and terrain. The ocean water is a deep teal color.

**THANK
YOU**