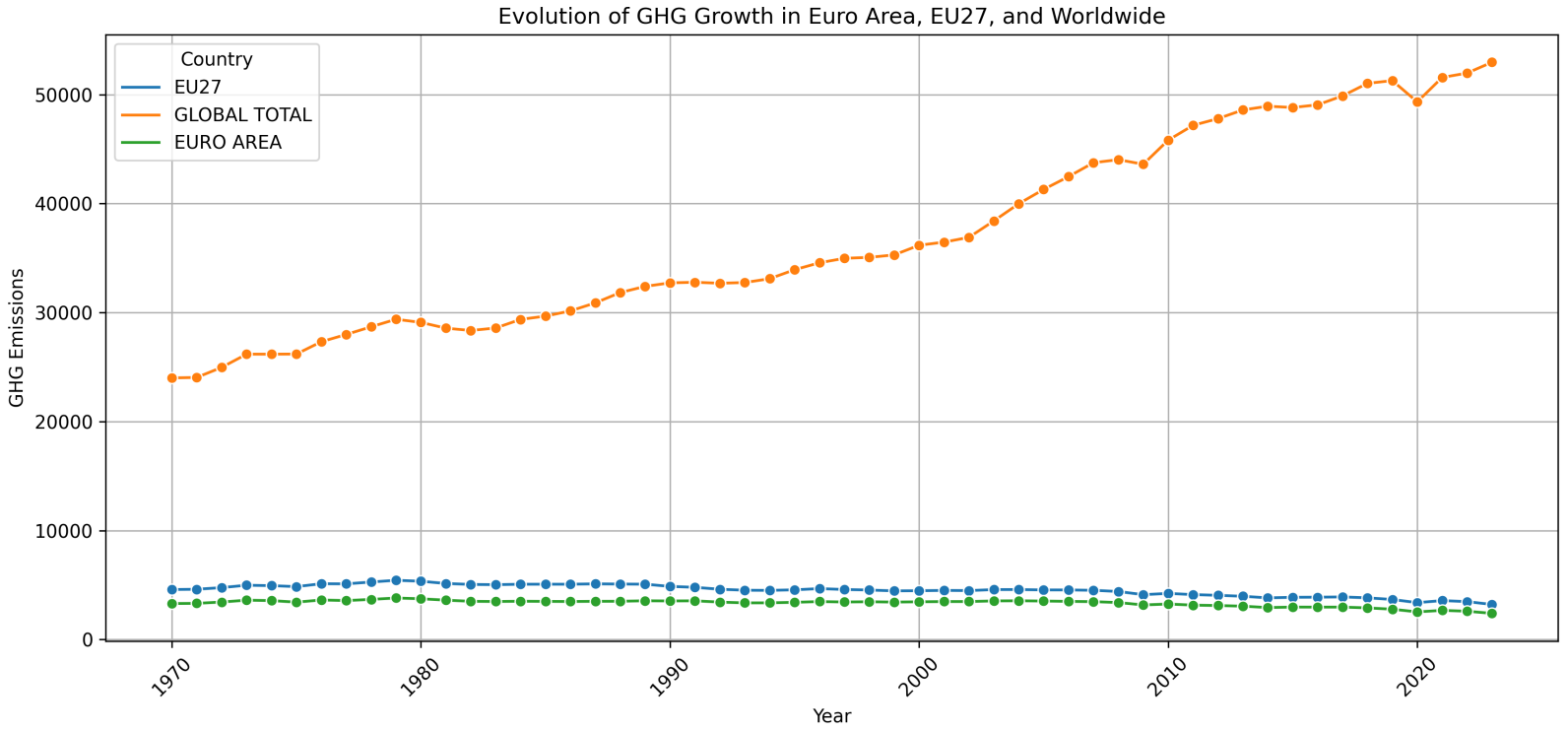
Visualizing Global Greenhouse Gas Emissions: Trends, Per Capita Analysis, and Regional Contributions

Chart 1 – Evolution of GHG growth in the euro area, European Union (EU27) and worldwide



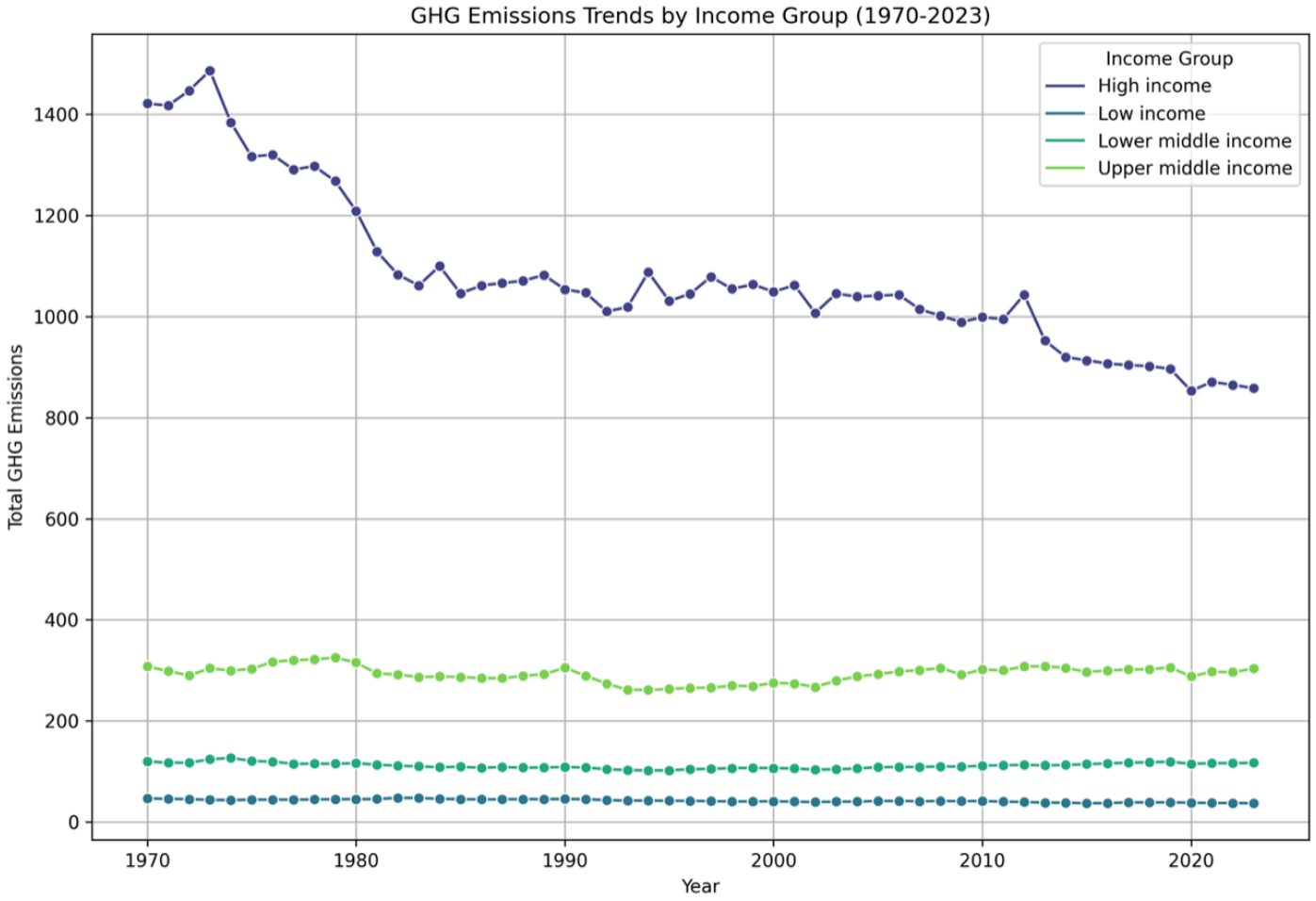
Source: Emissions Database for Global Atmospheric Research (EDGAR).

- Global GHG emissions have increased from 1970 to 2023, with a noticeable acceleration after 2000.
- EU27 and Euro Area emissions have remained stable, showing effective emission reduction policies.
- EU27 and Euro Area emissions have a small fraction compared to global totals, drawing attention to their reduced global share.

Kaggle Code: Full GHG Data Analysis

https://edgar.jrc.ec.europa.eu/report_2024?vis=ghgpop#data_download

Chart 2 – Comparison of countries' GHG emissions per capita aggregated according to the World Bank income groups



Source: Emissions Database for Global Atmospheric Research (EDGAR).

- High-income countries show a significant decline in GHG emissions from 1970 to 2023, likely showing advancements in energy efficiency and shifts to clean energy sources.
- Lower-middle-income and upper-middle-income groups maintain steady or slightly increasing emissions, indicating industrial growth and economic development in these regions.
- Low-income countries have minimal emissions, showing a stable trend, but their contributions remain insignificant compared to other groups.

Kaggle Code: Full GHG Data Analysis

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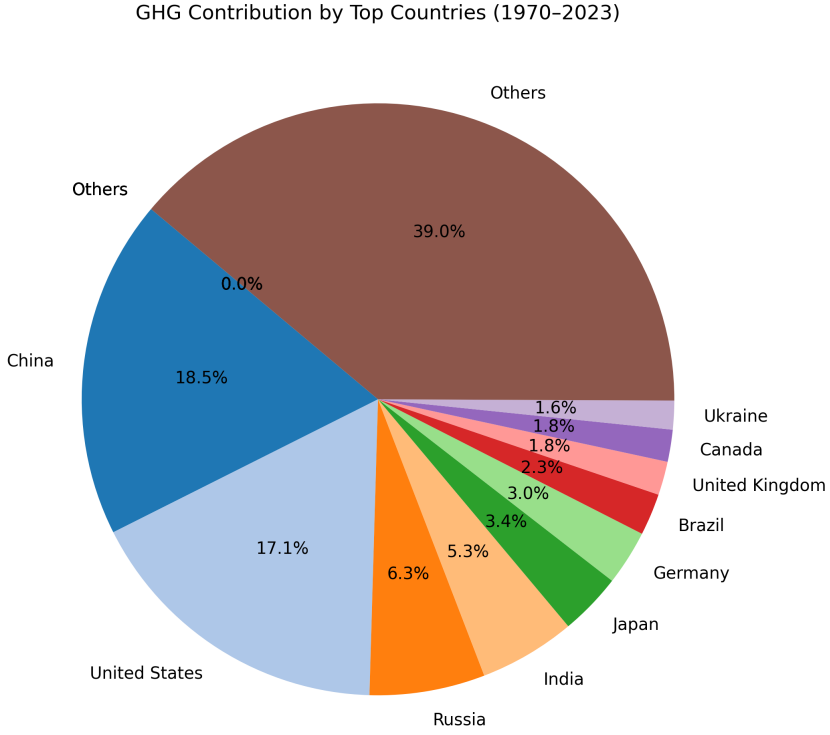
Chart 3– Contribution of individual country to total world GHG emissions.

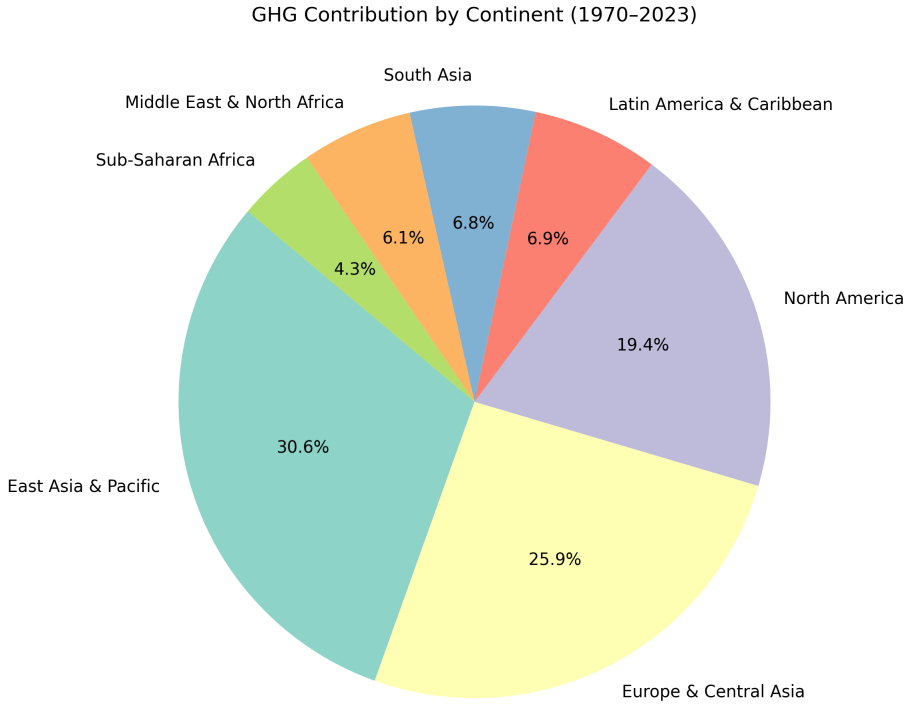
$$\text{Country Contribution (\%)} = \left(\frac{\text{GHG Emissions of Country}}{\text{Total GHG Emissions of World}}\right) \times 100$$



Source: Emissions Database for Global Atmospheric Research (EDGAR).

Chart 3 – Contribution of continent GHG emissions to total world GHG emissions.

$$\text{Continent Contribution (\%)} = \left(\frac{\text{Total GHG Emissions of Continent}}{\text{Total GHG Emissions of World}}\right) \times 100$$



Source: Emissions Database for Global Atmospheric Research (EDGAR).

- East Asia & Pacific is the largest contributor to global GHG emissions, followed by Europe & Central Asia and North America, highlighting the emissions in industrialized and vastly developing regions.
- China, United States, and Russia are the top three country-level emitters, collectively accounting for a significant share of global emissions, while smaller contributors cumulatively represent 39% of total emissions.
- Regional and country-level disparities in GHG emissions reflect differences in industrialization, economic development, and population distribution across the world.

Kaggle Code: Full GHG Data Analysis

https://edgar.jrc.ec.europa.eu/report_2024?vis=ghgpop#data_download