CLIMATE CHANGE ANALYSIS
VASANTHA KAVYA KARANAM *[22021986]*

#Github: github.com/vka06/ads-1-3

✓ Introduction

The issue of climate change poses a mounting threat to the health of our planet and the welfare of both humans and animals. It is caused by various human activities, such as deforestation, agriculture, and the burning of fossil fuels, which have contributed to this problem. This study aims to examine various indicators related to climate change and identify the countries with the largest forested areas, based on data collected from the World Bank.
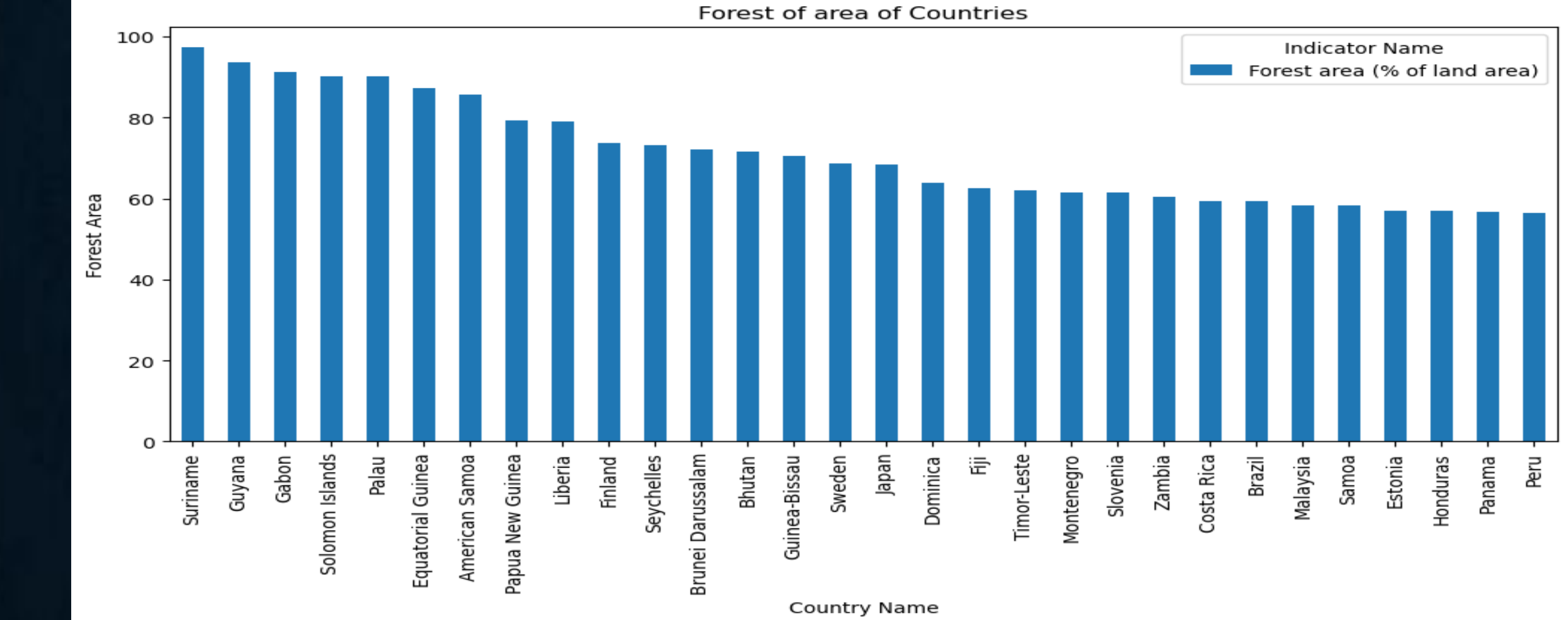
❑ Background

I used the climate change indicators from the World Bank Data. Then I performed in-depth analysis on selected data.
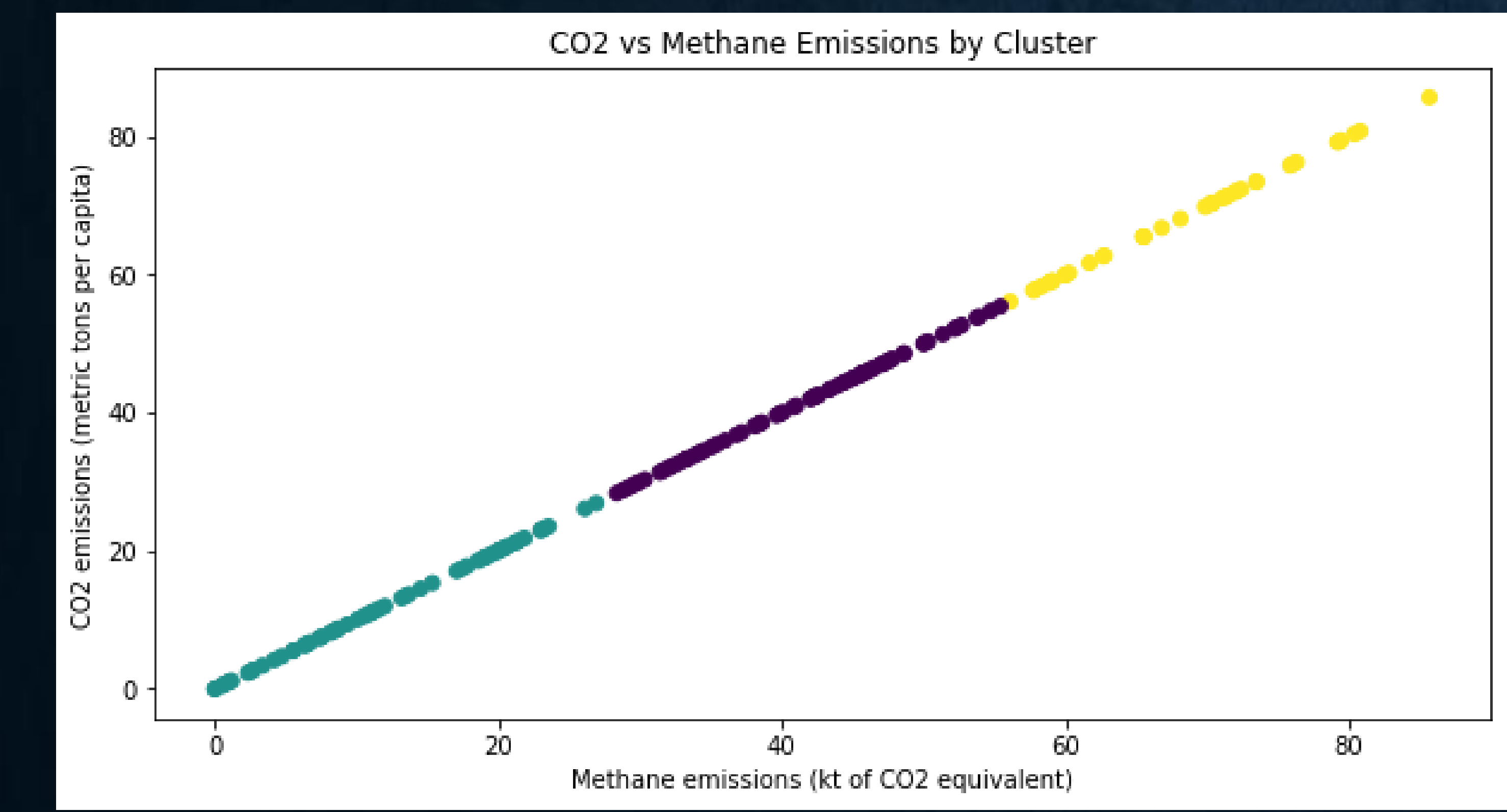
❑ Analysis
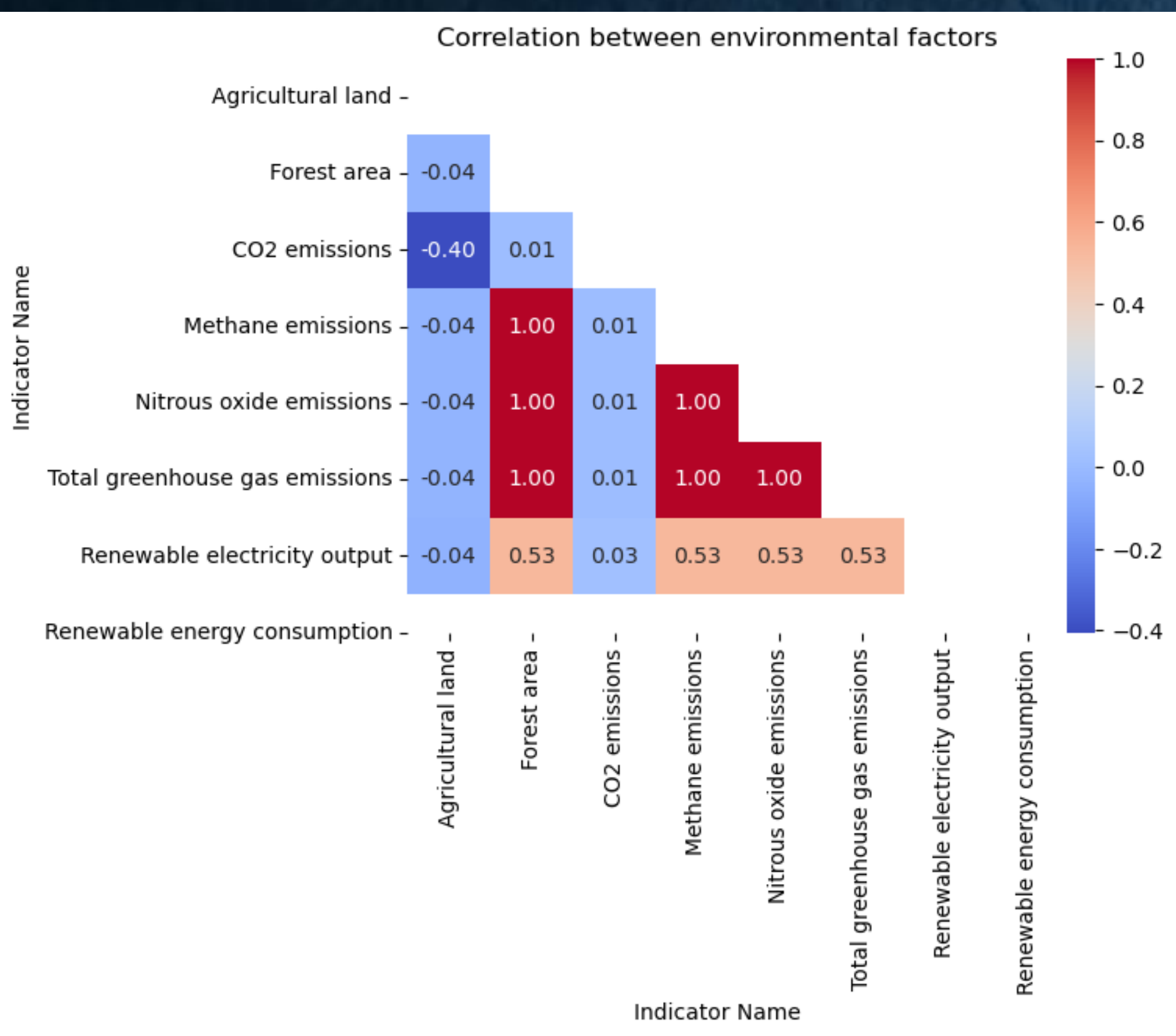
According to the Pearson correlation analysis, there was a negative correlation between forest area and agricultural land, as well as other indicators.

Cluster 0	Cluster 1	Cluster 2
• 38.83% Agricultural land • 12.12 metric tons of CO229.77% forest area	• 36.94% Agricultural land • 67.84 metric tons of CO232.93% forest area	• 36.62% Agricultural land • 41.05 metric tons of CO231.27% forest area

In the clustering analysis, it was observed that cluster 0 exhibited the lowest levels of CO_2 and methane emissions, cluster 1 had intermediate levels, and cluster 2 showed the highest emissions.

By employing a curve_fit model trained on data collected between 1960 and 2021, we projected the global population up to 2040. Our predictions indicated that the population would increase from 7.942 billion in 2021 to 9.495 billion in 2040.
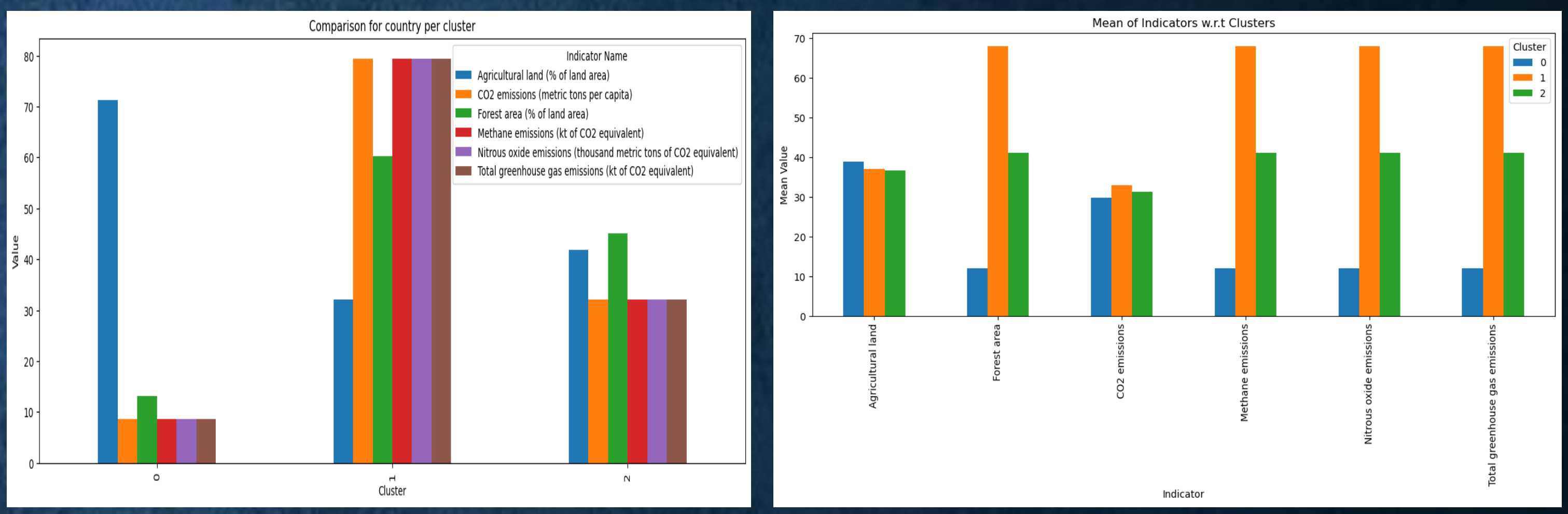

The top 20 countries with the highest forest area are…

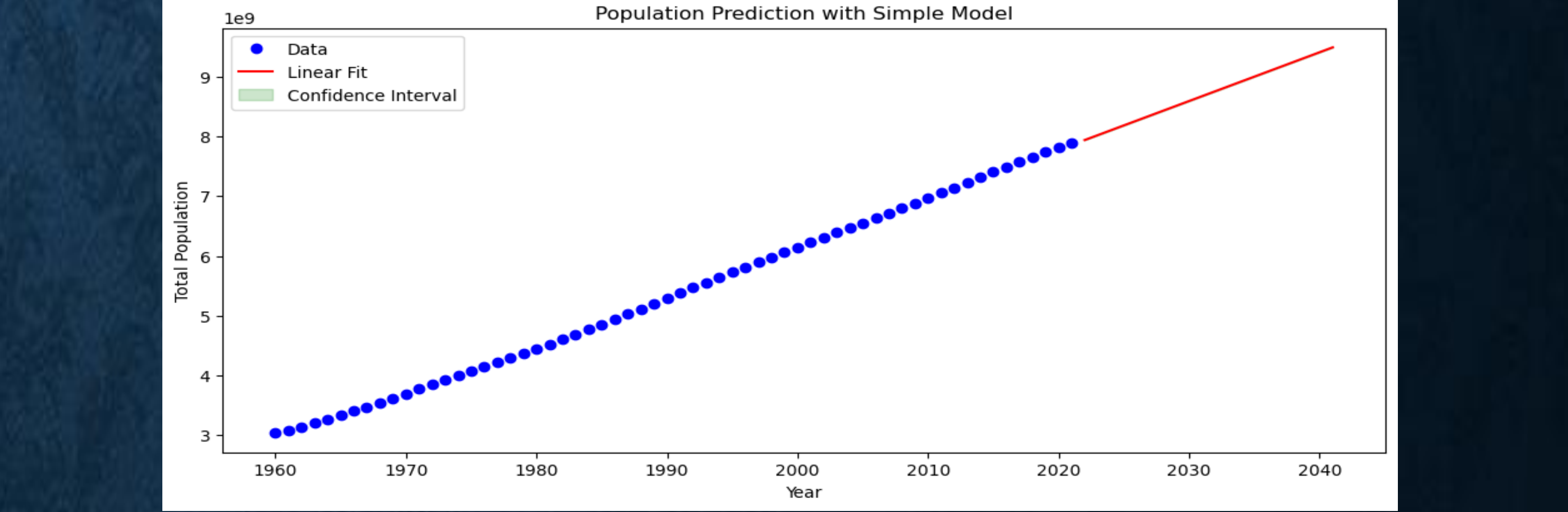Our KMeans clustering analysis selected one country from each cluster, and presented the average indicator values.

❑ Conclusion

To summarize, our study underscores the pressing need to curb greenhouse gas emissions, particularly CO2 and methane, to tackle climate change. The clustering analysis has identified countries that demand immediate action to reduce their carbon footprint. Additionally, the countries with high forest areas can offer insights into sustainable land use and conservation practices. Our projection of the world's population growth underscores the urgency of addressing climate change now to ensure a sustainable future for generations to come. It is crucial to take swift action at both individual and national levels to reduce greenhouse gas emissions and promote sustainable practices to mitigate the negative effects of climate change.