University of Hertfordshire UH

Climate Change Data Analysis Based on World Bank Data

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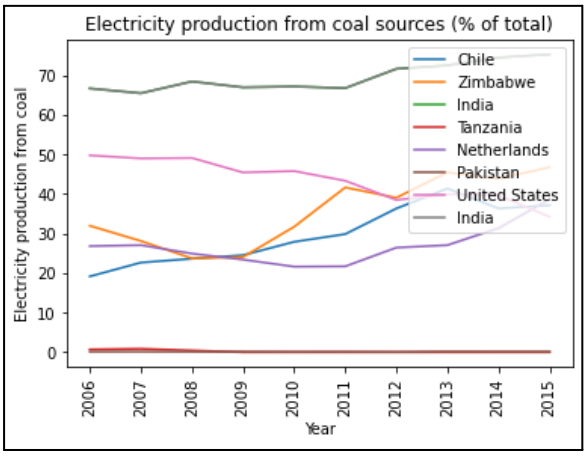
GitHub Repository: https://github.com/Anush123678/assignment_2.git

Abstract:

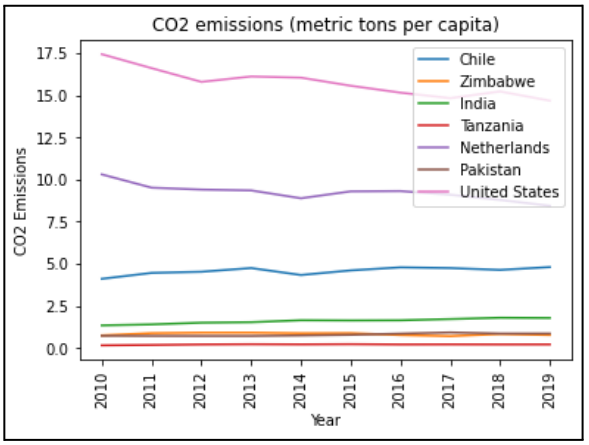
This document aims to examine the change in climate using the world bank data. The primary focus is on forest area (land sq. km) and its impact on various indicators (for example, CO2), with Python and its data analysis libraries used to support research and findings. The study reveals that the forest area has a great impact on production of Carbon Dioxide gas. Larger the forest area, the lesser the CO2 production is. Therefore, this research underscores the pressing need to address population growth and its environmental implications.

The environmental change defines the adjustment in weather patterns, specially in relation to temperature with Carbon dioxide gas emission and forest area. It is primarily caused by the emission of carbon dioxide gas. There are a lot of different reasons behind the increase in Carbon Dioxide gas emission. The destruction of the forest area is one of the main reasons. The Carbon Dioxide gas traps heat in the atmosphere, leading to the gradual warming of the planet and various climatic changes.



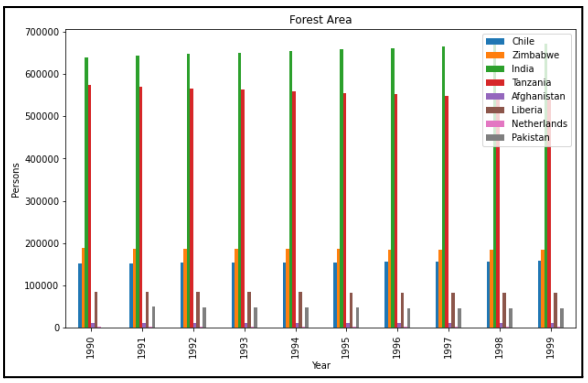
To examine the indicators effects on the production of Carbon Dioxide gas, I have studied the production of electricity from coal sources. In the plot above, we can see that there is an upper trend in most of the countries except the United States and Tanzania. India is on the top of generating electricity using coal sources. After studying this indicator's impact on Carbon Dioxide gas, I got to know that the countries having more coal sources for electricity produces more Carbon Dioxide gas.

To deduce the preceding results, I have also compared the data for Carbon Dioxide gas production in different countries.



In the plot above, we can see that the United States has a downward trend in the production of Carbon dioxide gas. India has relatively less production of Carbon dioxide but it is also displaying an upper trend for the gas production.

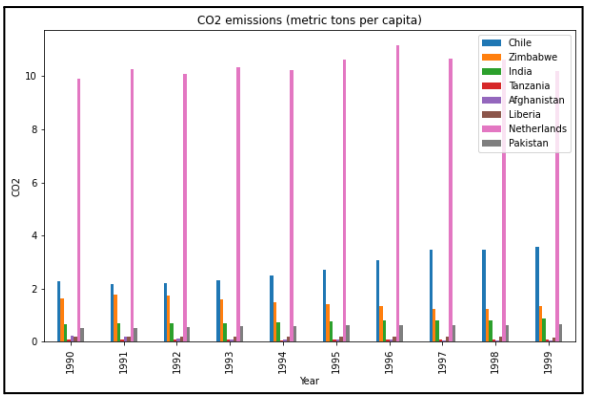
By comparing both of the graphs, we can deduce that the countries who depend on coal sources for the generation of electricity have relatively more Carbon Dioxide gas emission and the countries having less sources have less gas production.



I have created bar plots too to compare the Carbon dioxide gas production depending on the forest area.

In this plot, we can see that India has the largest area of the forest in the specified group of countries. The Netherlands has the least area of forest in it.

After comparing this data with Carbon dioxide gas production, I came to know that the relation between forest area and Carbon Dioxide gas production is inversely proportional to each other. I have also created a bar plot for Carbon dioxide gas production for this group of countries.



In the preceding graph, we can see that the Netherlands has the largest value of carbon dioxide gas production.

On the other hand, India has the least value of Carbon dioxide gas production.

From this comparison, we can deduce that the countries having larger forest area has lesser Carbon Dioxide gas production.