University of Hertfordshire UH

Climate Change Data Analysis Based on World Bank Data

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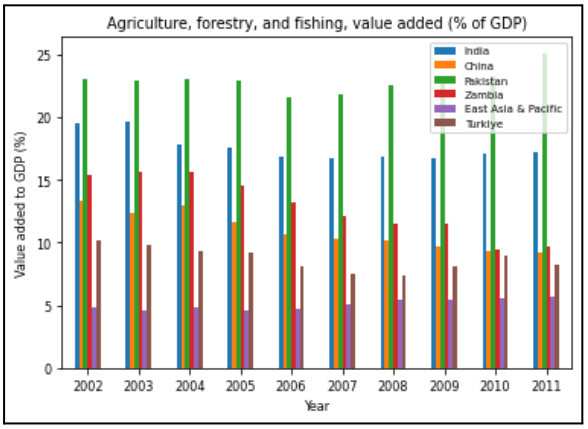
GitHub Repository: https://github.com/wajiha577/Assignment-2.git

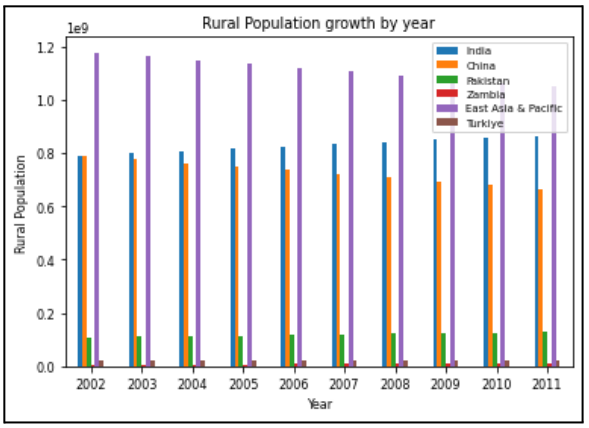
Abstract:

The scope of this report is to define some findings on environmental change and anthropogenic climate change. To complete this report, I used the data from the world bank. My main focus was on the change in population growth and its effect on the world's other indicators. I have used Python and its data analysis libraries to support my research and findings. The result of my report is that the increase in population growth also increases the emission of CO2 gas. As the population grows, the world needs to destruct some green land to develop some cities on it. That is the main reason behind the increase of CO2 emission.

Climate change is one of the most pressing issues of our time, and it is increasingly affecting our planet and our lives. I have prepared a report on the data analysis of climate change. For this analysis I used the world bank's data. My main focus was on the effects of population growth on different indicators of climate change. I selected a group of countries to compare their data.

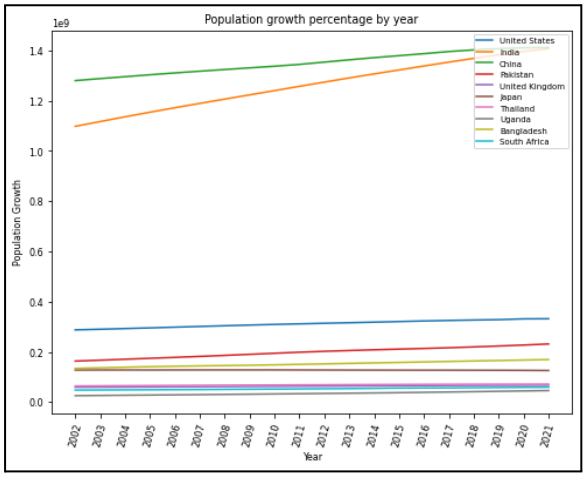


The plot above displays the value added by agricultural production, forest area and its other aspects, and fishing in the total GDP (Gross domestic product) of some countries. In this graph, we can clearly evaluate that Pakistan's mostly GDP depends on its agricultural production, business of fishing, and its forests that is approximately 25% of its total GDP in the year 2011. We can also observe that the value added in GDP of India is approximately 18% in the year 2011. East Asia & Pacific is the lowest one in the value added by these factors.



The above graph represents the rural population and its growth in a group of countries. We can clearly see that India is in the first position in population but it does not mean that the population growth rate is higher in India. India is one of the largest countries in the world that is why its population is nearly 1.4 Billion in counts. The country China holds the second position as the world's biggest population country and it is showing the upper trend in the coming years. Zambia has the lowest population in its country.

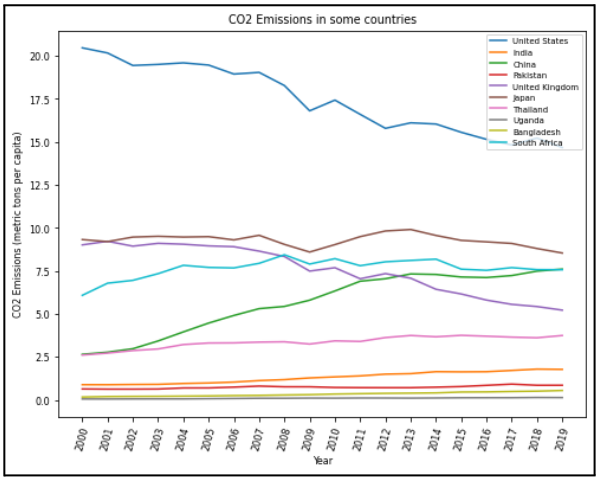
If we analyse the data by comparing the preceding two graphs, we can observe that the values added by agricultural production, fishing and forests is higher in the countries with low populations.



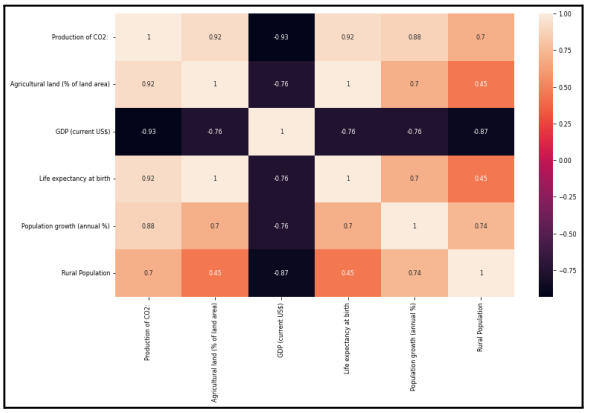
The above graph represents the change in population growth by year from the year 2002 to 2021. For this comparison we have selected a group of countries from world bank data. All the countries have an upper trend in population growth by year. From the graph, we can deduce that India and China hold most of the part of population growth in the world.

Most of the countries have approximately some kind of constant trend (not completely constant).

I have also compared the emission (production) of Carbon Dioxide gas in these countries. The following graph displays the summary of the emission of CO2.



In this plot, we can see that the United States shows the downward trend of CO2 emission. China displays the upward trend in gas emission.



To analyse the relationship between different indicators for climate change. I have selected the country for the United States to represent the correlation. In this heat map, we can deduce that the growth in rural population and GDP are directly proportional to each other.