# STATISTICAL ANALYSIS AND VISUALIZATIONS FROM THE WORLD BANK

In this report we are performing some statistical analysis by exploring the data from a World Bank, and plotting some time series visualizations over the years, especially related to the climatic change. There are many ranges of indicators which influence and effect the climate change like C02 emission, methane emission, electric power consumption, and forest area etc.
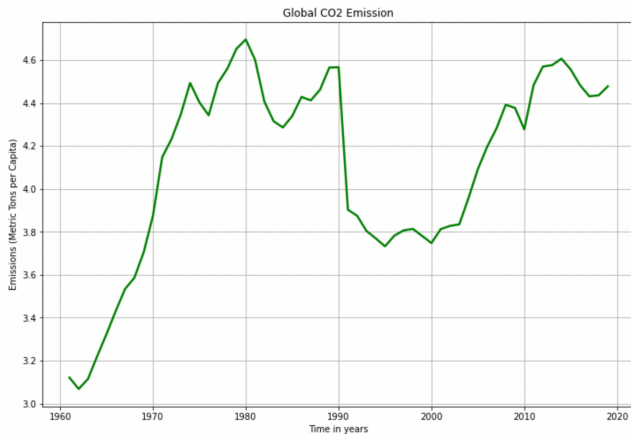
The CO2 emission is broadly across many countries but in this report, we will analyze the global emission of CO2 over the period of 1960 and 2020. The emissions are in metric tons per capita. If we observe the time series plot of the global CO2 emission, it is very clear that there is good spike from 1960 to 1980. After that for next 20 years, it is slightly decreased and over the past few years again the emission of CO2 is high across the globe for all countries. The emission of CO2 is highly influencing the climate change for the past few years.

Now, let's take a look at other indicator i.e., urban population for the past 30 years in only few countries like USA, UK, Australia, UAE, and Canada.
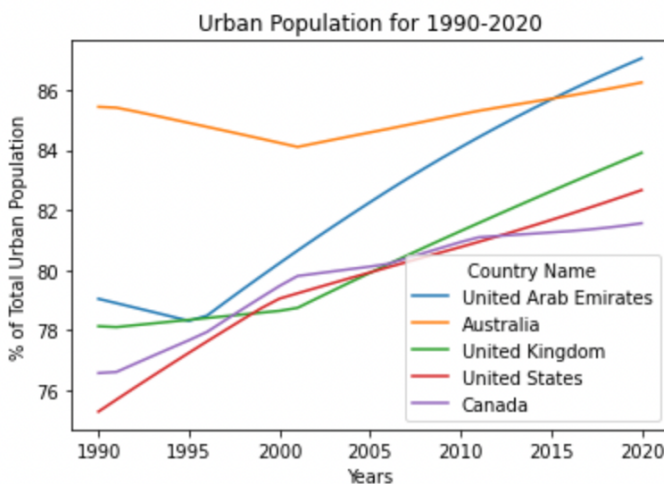

Almost for the countries except for Australia, there is linear progressive growth in the percentage of total urban population for the last 30 years which might drastically change the climatic condition across all the mentioned countries. In USA, the urban population from 1990-2020 is progressively increasing and there might be many other indicators which actually change climatic conditions in USA.

To know the other factors and their respective influence in climate change in USA, let's find correlations between few indicators.

From the World Bank data, we have many indicators which play an effectual role in influencing the climate change for e.g., agricultural land, methane emission, energy consumption, forest area and arable lant etc.

Let's analyze some correlations between few indicators for climatic changes in USA.
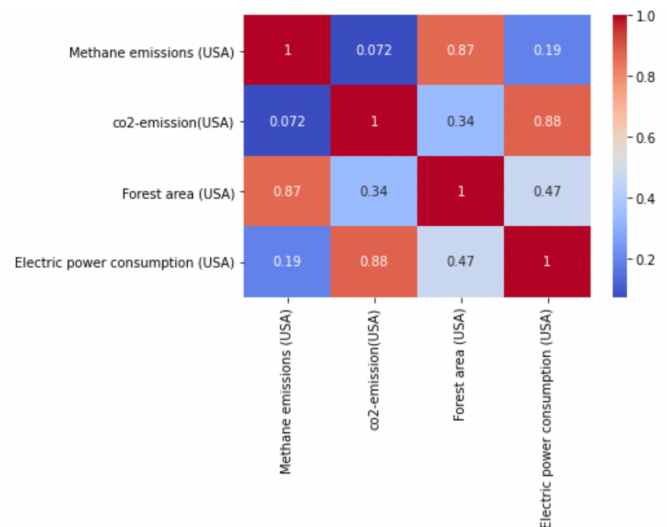
From the above heat map, we see that the forest area is positively correlated with methane emission in USA. And CO2 emission is also positively correlated with electric power consumption. When the methane emission and forest area are simultaneously correlated and increased, we might expect a change in climate for the period of time in USA compared to its urban population over the same period of time.