**Title: - Analysis and observations of climate change metrics on a country-by-country basis**

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**Abstract**

Studying the earth's climate system is highly fascinating, because of the difficulties and complexity. There are several metrics taken into consideration to study the behavior of the atmosphere all over the world to understand how the earth's climate changes. These parameters are crucial for defining and comprehending climate changes, and they are ingenious in coming up with ways to deal with the observed uncertainties. In this report, all statistics, and variations in the trends of the metrics considering the earths climatic system are compared and analyzed. The data is gathered from world bank dataset factored into the equation with respect to population, Co2 emission, and forest area are considered and are compared. The results in the form of graphs indicate the metrics chosen for comparison purposes.

**Analysis and Observations**

The below barographs and line graphs indicate the differences with respect to Co2 emission, Forest area, and Population. From the below bar and line graphs it can be observed that the population of China and India is similar as its slope tends to 1. The forest area with respect to India tends to be a straight line, but for China there is an increase and then is consistent. In earlier years the Co2 emission is increasing rapidly but over the years the there is a slight increase which is less compared to earlier years. For China, the increase in Co2 emissions is very high from 1990 to mid 2000’s and from then it has been consistent.

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From the below bar graph, it can be interpreted that the population and Co2 emission increased form the 1990 to 2012 to a certain extent and is almost stable since 2012. But the forest area has increased from the 1990 to 2000, over the years it has tend to decrease.

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The below line graph is interpreted considering the year 1990 as the reference such that what proportion of the chosen metrics have increased or decreased over the years. It can be observed that Co2 emission has rapidly increased from mid 1990’s to 2013. From 2013 it is Co2 emission released are almost stable but with a slight increase over the years. In the initial years the forest area has increased and then over the years from 2016 it has got a steep decrease till 2017 and from then there is again an increase in the forest area and is stable but is observed there is slight decrease over the years. The world population experienced an increase from the year 1990 till 2012 and since then it is almost consistent certainly but there is a slight increase in the world population.

Chart, line chart

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