STATISTICS AND TRENDS

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ABSTRACT

This report analyses climate change data from several nations over a specific time period using several indicators. Line graphs, bar graphs, and heat maps are used for visualisation. Using these data visualisation tools, we will gain an understanding of the data we selected as well as an overview of the changes that occurred over time. The heat map is used to discover the correlation between the indicators provided here.

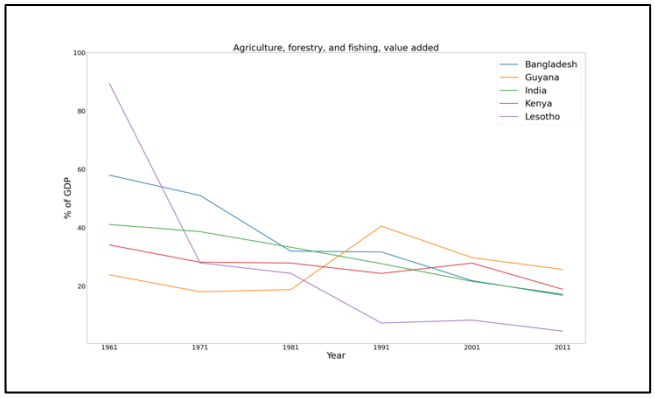
Link: https://github.com/OyeItsTom/STATISTICS-AND-TRENDS

Data Source: https://data.worldbank.org/topic/climate-change

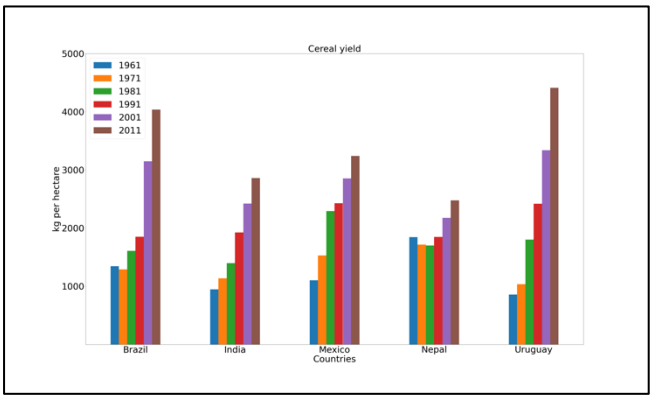
Analysis of statistics on climate change based on World Bank data

The impacts of the following variables on climate change were examined in relation to one another in this analysis, which involved 15 countries from different continents: property for agriculture, GDP contribution from agriculture, forestry, and fishing; arable land; cereal yield; CO2 emissions; electric power usage; forest area; total population; and urban population.

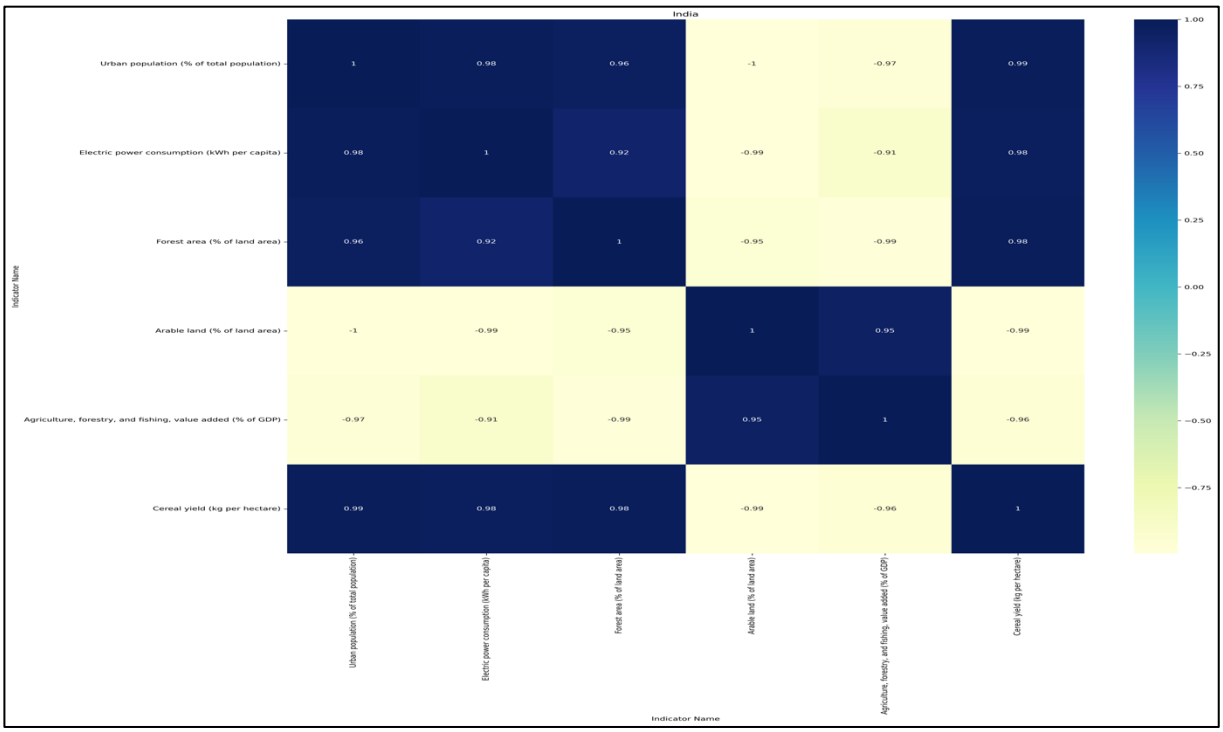
The analysis of the causes resulted in the finding of some correlations between the variables.



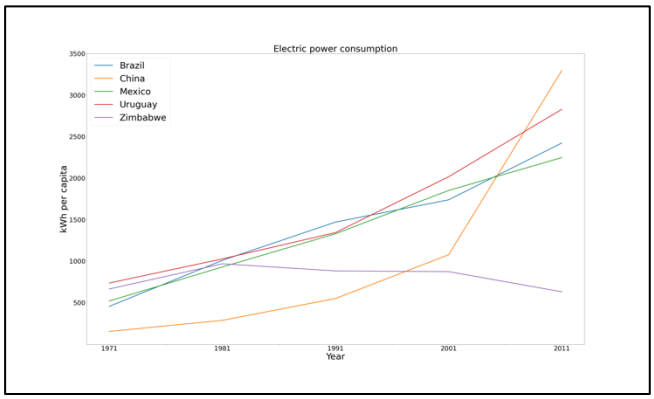
This line graph, which uses data at ten-year intervals from 1961 to 2011, displays the GDP contribution from agriculture, forestry, and fishing by different nations. In 1961, Lesotho contributed the most to the GDP, but the first 10 years show a substantial decline. Then, when compared to the other four nations, it reached its lowest point in 2011.



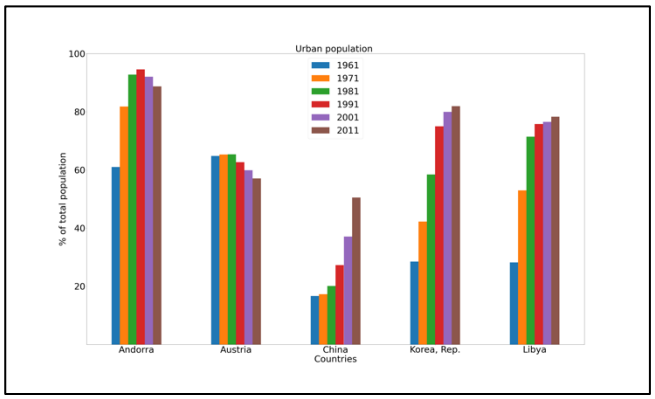
This bar graph shows the cereal yield by nation from 1961 to 2011 using data in ten-year increments. Uruguay had the lowest cereal production up until 1971, but after 2001 it overtook the other four countries as the country with the highest cereal production.



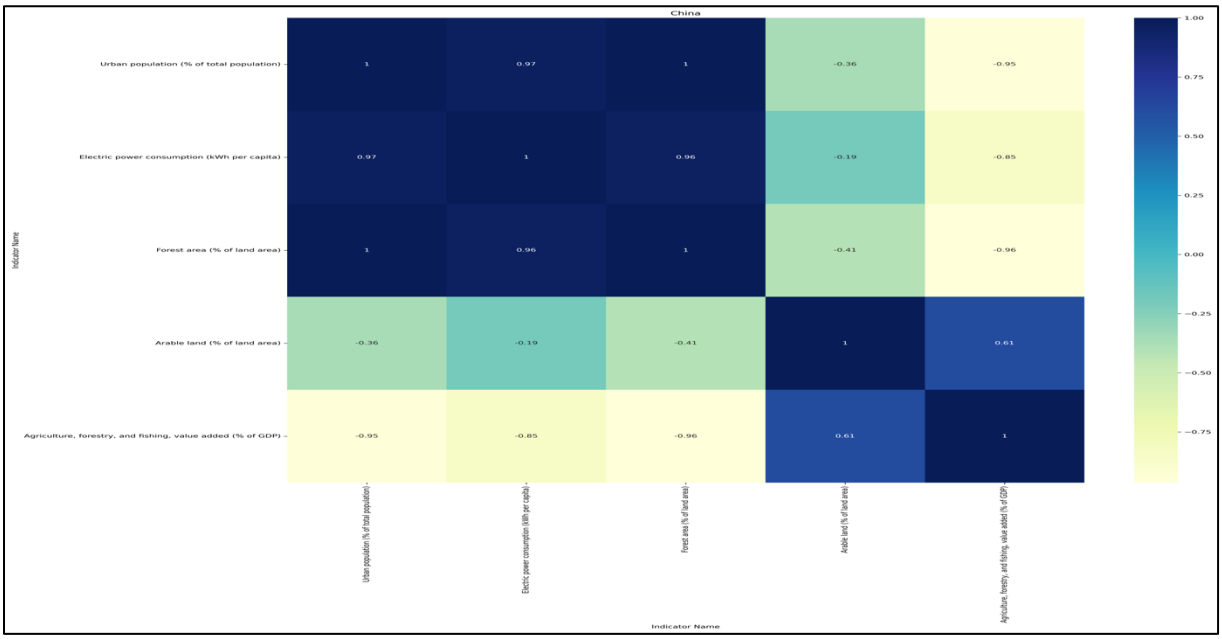
Comparing the heat map of correlation in India with the two graphs mentioned above, it becomes clear that there is a negative correlation between Indian agriculture, forestry, and fishing GDP contributions and cereal production. The bar graph shows increasing cereal production, while the line graph shows falling agricultural, forestry, and fishing GDP contributions in India.



The use of electricity in five countries from 1971 to 2011 is shown in this line graph, which uses data in ten-year increments. After 1981, only Zimbabwe experienced a decrease in its electric power usage; otherwise, all other nations continued to experience continuous increases.



This bar graph, which uses data in ten-year increments, displays the urban population of five different countries from 1961 to 2011. China has the lowest urban population in 1991, and Andorra has the greatest. China also exhibits a steady rise in its urban population.



It is evident that urban population and electric power consumption are positively correlated when comparing the heat map of correlation for China with the two previous graphs. The line graph shows the continuous rise in electricity usage, and the bar graph, with respect to time, shows the continuous rise in urban population.

The summary of China's statistics with four variables is shown in the table below:

China Summary Statistics

	Population, total	CO2 emissions (kt)	Forest area (sq. km)	Agricultural land (sq. km)
count	24.0	24.0	24.0	24.0
mean	1264851666.6666700	4986426.682942710	1812953.1745833300	5239516.0
std	67882217.25047420	2565195.117739500	154574.05356497000	56036.13413957700
min	1135185000.0	2173360.0	1571405.9	5065920.0
25%	1214376250.0	3084092.5	1685600.67	5237267.5
50%	1276125000.0	3669570.029296880	1805420.245	5246187.6665
75%	1319577500.0	7044785.15625	1941176.7675	5280093.72225
max	1363240000.0	9984570.3125	2064207.02	5290386.0