# APPLIED DATA SCIENCE -1 ASSIGNMENT 2


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**REPO LINK:** anushavishnumolakala/ads2_rework (github.com)

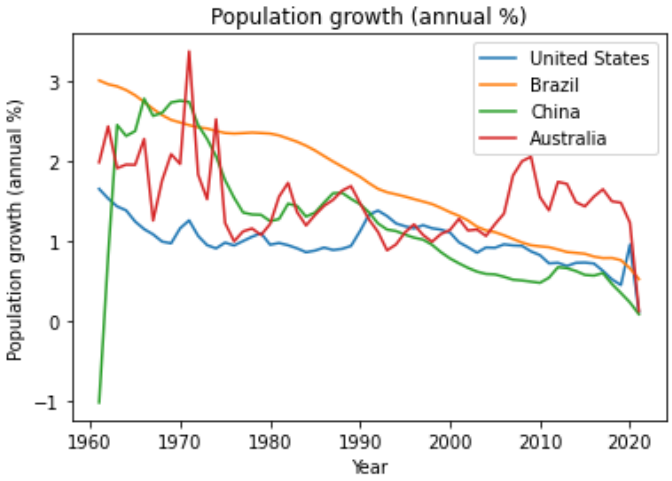

**Abstract:**

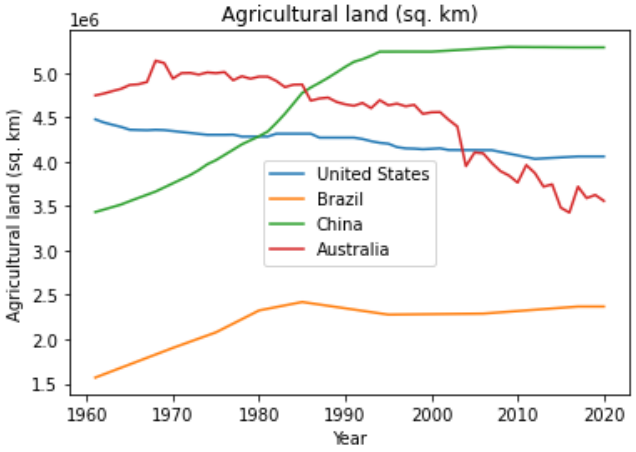
This investigates the dynamic relationship between agricultural land and population growth. As population expands, the demand for agricultural land intensifies. Balancing the competing needs of food production, land preservation, and population growth presents challenges for sustainable land management and ensuring long-term food security and environmental sustainability.

# Population Growth and Agricultural Land: Exploring the Correlation

For the data analysis 2 indicators Population growth (annual %) and Agricultural land (sq. km) of 4 different countries are taken from the world bank data base.

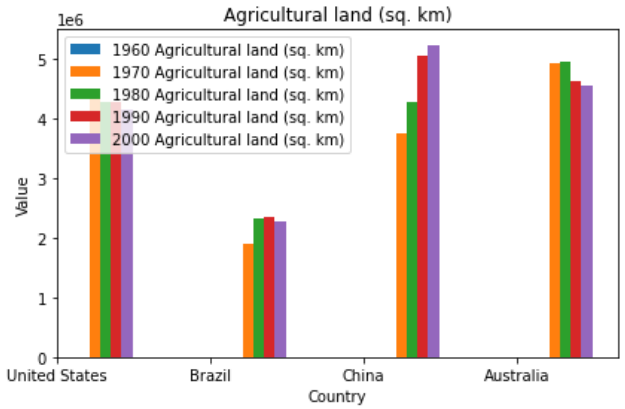
This investigation found some correlation between the indicators and reasons behind those are studied.



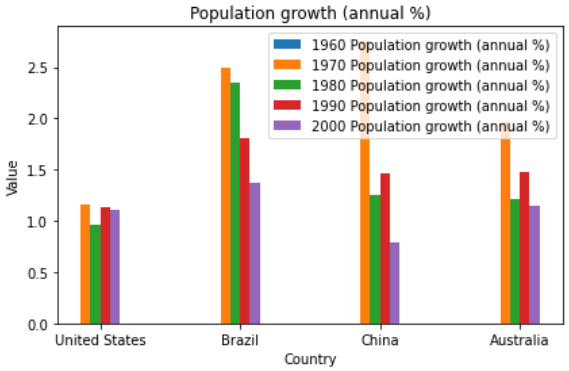




The line plot above on Population growth (annual %) was created using the world bank data from the year 1960 to year 2020. Initially in 1960 Brazil used to has the highest population growth but by the end of 2020 all the countries has nearly same growth of population. It is compared with the agricultural land as the increase in population the agricultural lad also be increased to meet the needs of all the people.

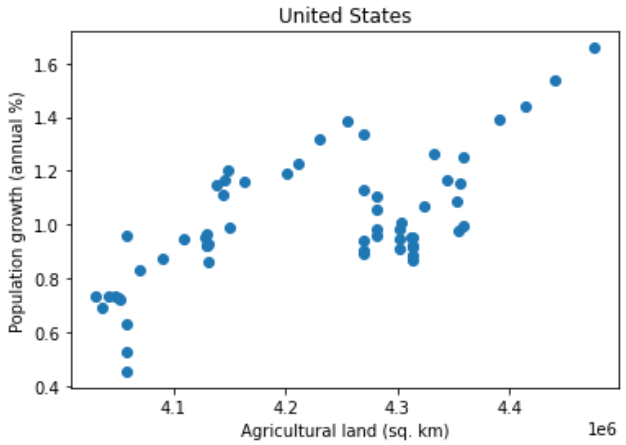
The above line plot on Agricultural land (sq. km) was created using the available data from the world data bank from the year 1960 to 2020. If we observe this the Agricultural land in China is increased a lot in year 2000 when compared to 1960. We can also observe the agricultural land in Brazil also increased in year 1980.As the population increasing the agricultural land also increasing.



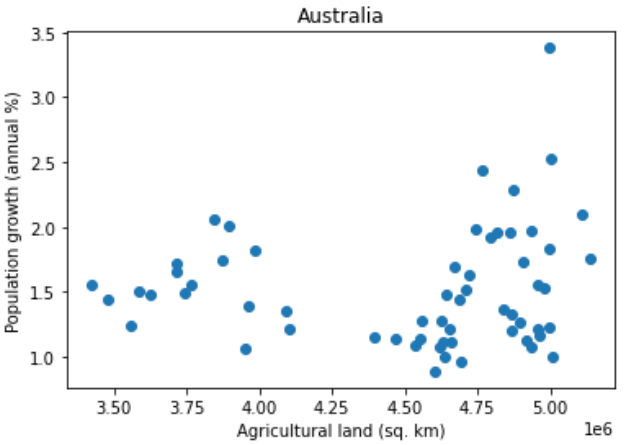

The above bar graph Agricultural land (sq. km) was made using the world bank data of 4 countries US, Brazil, China, Australia from year 1960 to year 2000.In this we can see change in agricultural land of all the countries from 1960 to 2000. In China the agricultural land is increased and in remaining all countries its remains almost same.



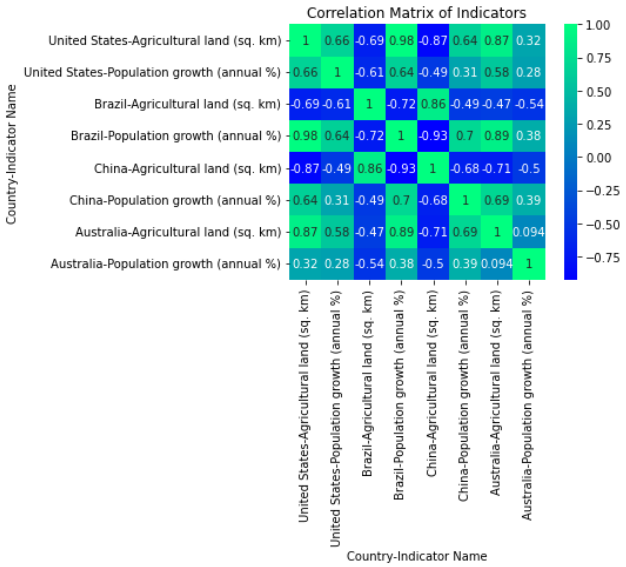

The above bar graph on Population growth (annual %) was created using world bank data of 4 different countries from year 1960 to year 2000.In this we can observe the population annual growth in % is decreased in all the countries in year 2000 when compared to year 1960. But however the population is keep on increasing in every country. So, to meet the needs of all the people the agricultural land also should be increased.




The above scatter plot is Population growth (annual %) vs Agricultural land (sq. km) in US. The agricultural land of US is increasing with increasing the population of the country.




The above scatter plot is Population growth (annual %) vs Agricultural land (sq. km) in Australia. The scatter plot illustrates the connection between agricultural land (measured in square kilometres) and population growth (measured as an annual percentage) in Australia. The dataset includes 60 data points for land and 61 for population growth.

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This is the heat map of 4 the different countries of 2 different indicators Population growth (annual %) and Agricultural land (sq. km). We can observe that whenever the population is increased the agricultural land of that country also increases.