

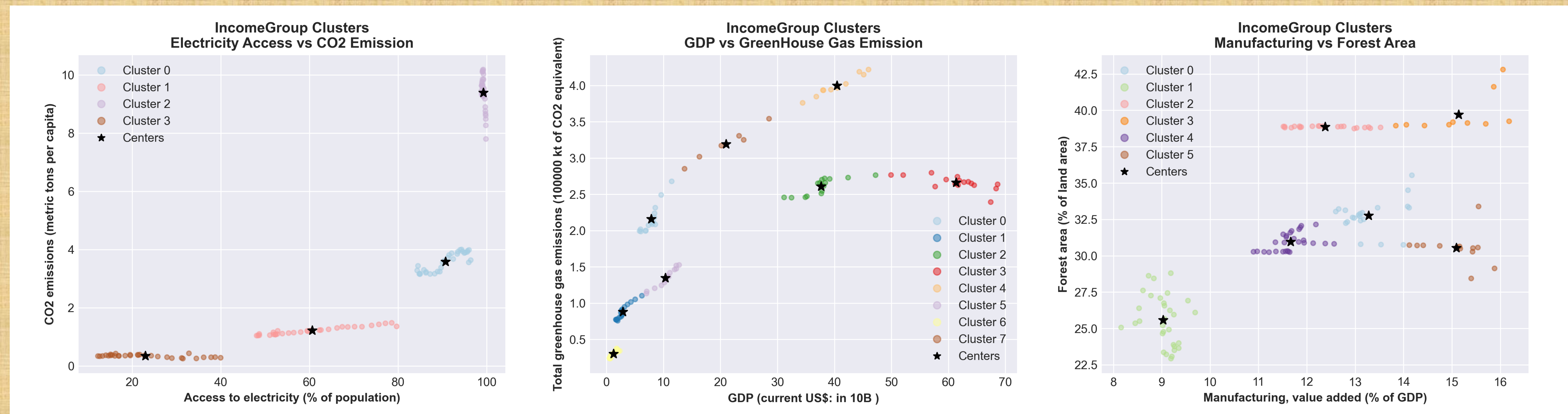
ECONOMICAL GROWTH IMPACT ON CLIMATE

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INTRODUCTION

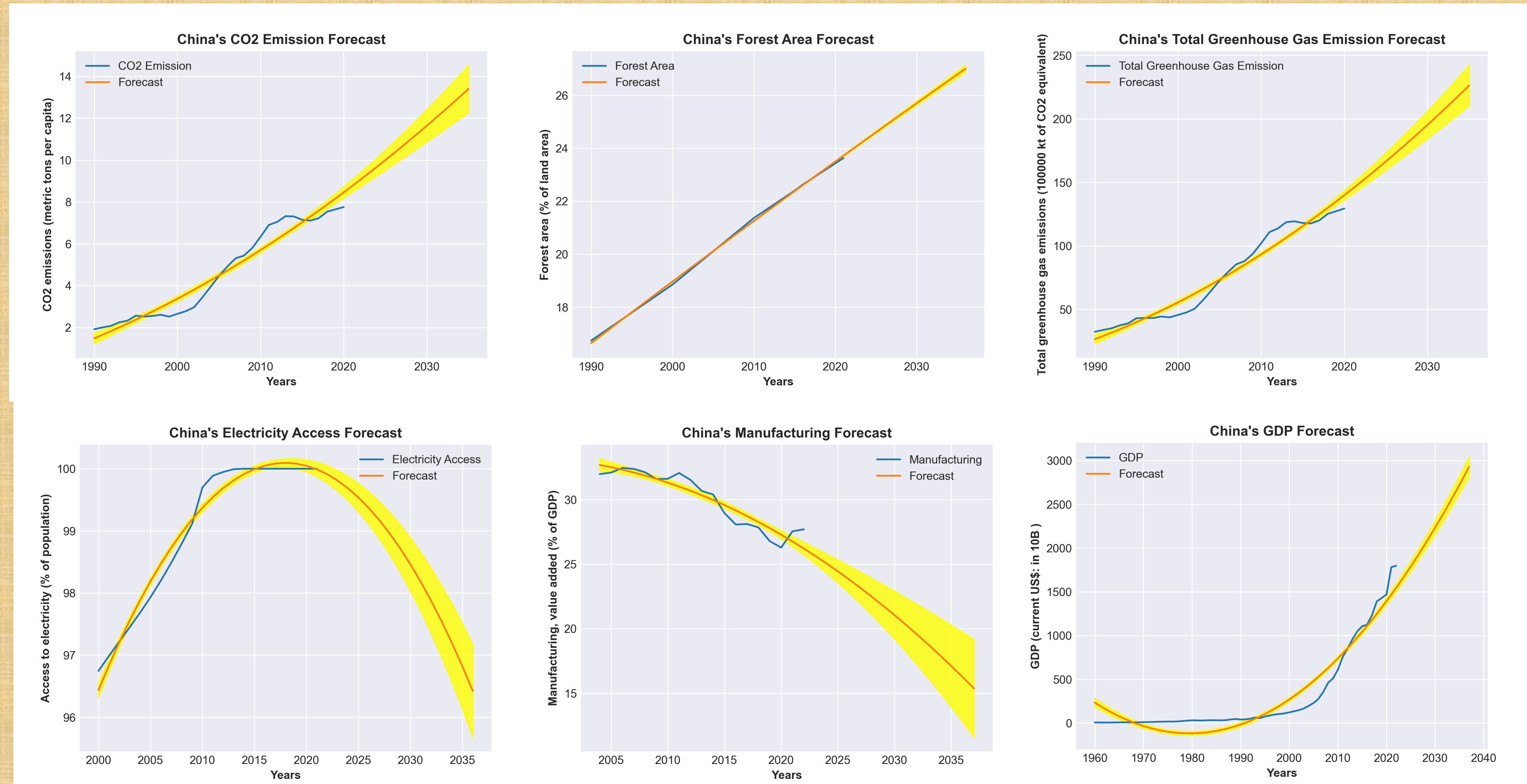
The Earth's climate has been changing course over the past few years, due to our advancement in science and technology, leading much more comfortable life than our ancestors. We, in the 21st Century, require unprecedented amount of goods, resulting in extracting raw materials from the depths of earth's soil and ocean beds, for manufacturing. The effects of mining to the environment are quite well documented, causing deforestation, soil-erosion, pollution, human-wildlife conflict, etc, but above all the emissions of greenhouse gases, warms the planet by trapping heat within the atmosphere. Yes, there are natural factors, like, volcanic eruptions, shifting our climate, but the human interaction with nature, has accelerated the process.

CLUSTERING



- ❑ **Left-Figure** → The graph of Electricity Access vs CO₂ Emission shows a clear divide between various countries income-group, giving distinct clusters, stating that the population of a country with higher chances of electricity access, emits more CO₂.
- ❑ **Middle-Figure** → The graph of GDP vs Total Greenhouse Gas Emission show 8 clusters, identifying countries with moderate GDP(350B-500B US\$)-Cluster 4, produces the highest total greenhouse gases, despite countries have higher GDP.
- ❑ **Right-Figure** → The graph of Manufacturing vs Forest Area produces 6 clusters, which implies that as the valued added manufacturing increases, the land area of forest also increases.

CURVE-FITTING & FORECAST



- ❑ China's **Total Greenhouse Gases** and **CO₂ Emission** plots shows to be linearly increasing for the next fifteen years, by almost 1.7 times and twice the present values, respectively, despite the downfall prediction seen in electricity access and manufacturing.
- ❑ **Manufacturing** in China is forecast to fall linearly to 15.37% of GDP from a current 27.70%. **Access to Electricity** forecast graph show that, the population will suffer to have proper electricity, falling back slightly lower to it's early 2000's.
- ❑ **Forest** growth has been linear over the years and forecast for next 15 years also says it will be linear. The yearly growth is about 0.8%
- ❑ **GDP** forecast graph clearly show the growth will be somewhat an exponential one, growing by almost 49% of current value.

[GitHub Repo](#)

CONCLUSION

The clustering analysis gives an insight that higher income countries, like United States, Germany contribution to the environmental degradation is quite high. However, the upper and lower middle-income countries, like Brazil and India, respectively, have started to produce high amount of pollutant due to urbanization. Looking at China's forecast, their effects to scrape greenhouse gases through foresting has not been yielding desire results, as the emission is on the rise. We need to starts taking care of our planet, as it has taken care of us.