IMPLICIT TRENDS OF TEMPERATURE AS A FUNCTION OF FOREST COVER

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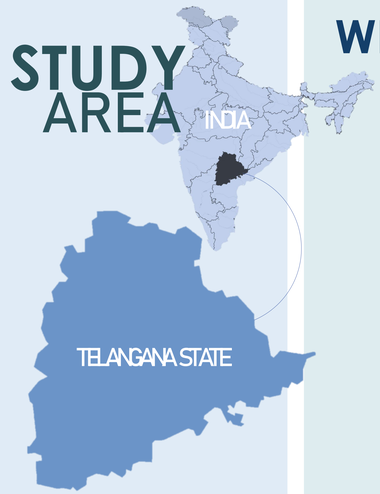
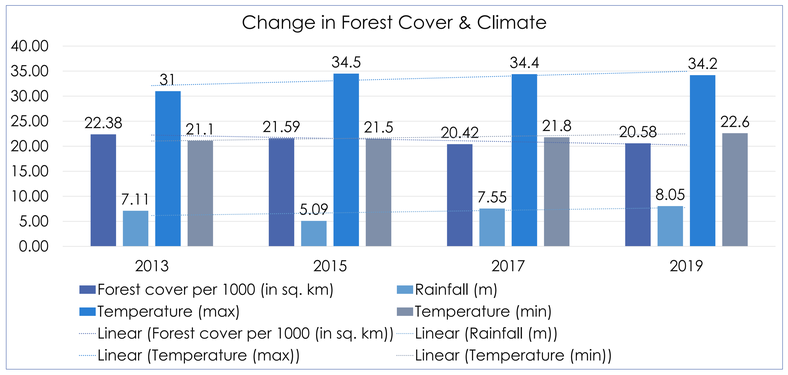
INTRODUCTION

Climate change due to natural and anthropogenic activities is considered to be one of the serious environmental issues in the world (Stern, 2006). In recent years, climate change science has become increasingly sophisticated and marked by higher and higher levels of confidence in its assessments, explanations and predictions. Much of the focus of climate change science has been on the increase of greenhouse gases in the atmosphere. Scientists have determined that without any greenhouse gases, solar heat would warm the surface of the earth to an average of about −18 degrees Celsius–far too cold for most of the life forms on the planet. The actual average world temperature of about 15 degrees Celsius, which many believe is critical insofar as providing a congenial environment for diverse life forms is concerned, is the result of solar heat trapped by greenhouse gases. The most common greenhouse gas in the atmosphere is water vapour, but there are several others. Some of these–including carbon dioxide, methane and halocarbons–have increased in concentration because of various human activities. Scientists have demonstrated that there has been a clear trend of global warming since the industrial revolution of the nineteenth century, and they have determined that this trend is the result of anthropogenic greenhouse gas emissions from industry, transportation, the heating and cooling of residential and commercial buildings, and energy production, as well as from other human activities that have affected carbon cycles such as deforestation and agriculture (Matthew and Hammill, 2009).

Situated on the southern India, Telangana state is located between latitudes 17° 7′ and 23.4624,″ N and longitudes 79° 12′ and 31.7664″ E. It is India's 12th largest state in terms of both populations (3.52 crores) and geographical area (11,208 lakh hectares). Telangana, the southern region of India, has been one of the region's more vulnerable subnational region to climate change and environmental hazards (Guntukula and Goyari, 2020).

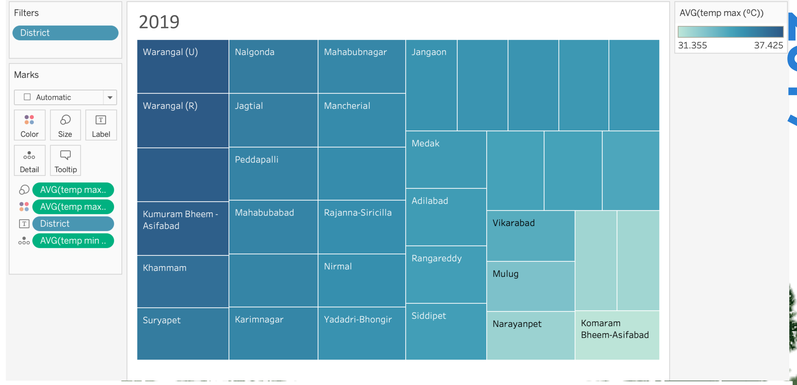


Year	Forest cover per 1000 (in sq. km)	Rainfall (m)	Temperature (max)	Temperature (min)
2013	22.38	7.11	31	21.1
2015	21.59	5.09	34.5	21.5
2017	20.42	7.55	34.4	21.8
2019	20.58	8.05	34.2	22.6

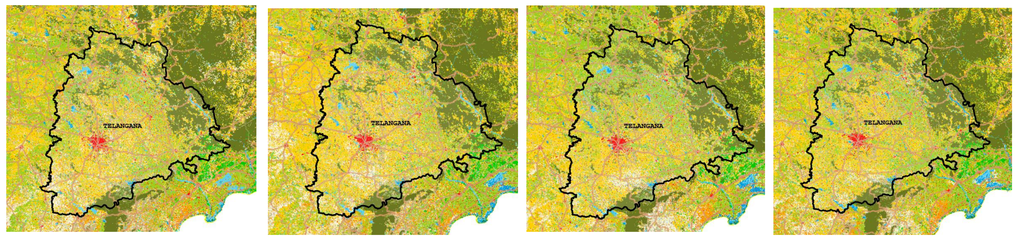


WHY IS TREE COVER IMPORTANT?

Tree cover provides many benefits, including air and water filtration, water and carbon storage, natural hazard mitigation, and appealing settings that encourage people to spend time outdoors. Trees can reduce noise, buffer pedestrians from traffic, and cool summer temperatures, making urban spaces more hospitable environments. Trees also provide vital habitat for a wide range of species. Humans gain many health benefits from the natural services that trees provide; examples from scientific studies include decreases in asthma, obesity, and cardiovascular symptoms. Trees often increase the aesthetic value, comfort, and safety of populated areas. In urban centers, people frequent parks and tree-lined districts to socialize, recreate, and engage with nature. Areas with trees also provide opportunities to observe and appreciate wildlife. Spending time in these settings has been shown to decrease stress, depression, and feelings of hostility. Additionally, simply viewing trees through a window may increase cognitive function and overall satisfaction, and aid in physical healing.



LANDUSE LANDCOVER CHANGE



APPROACH