

NATIONAL INSTITUTE OF TECHNOLOGY CALICUT
G-18 PRESENTS

A Curious Case of Bangalore

Specific Case Study of Temperature of Bangalore Over Years

Climate change is no longer some far-off problem, it is happening now, it is happening here.

BARACK OBAMA

METHODOLOGY

MERGING THE DATASETS

- AOD
- EVAPOTRANSPIRATION
- NDVI MEAN
- EVI MEAN
- PRECIPITATION
- TEMPERATURE

PLOTTING AND ANALYSIS

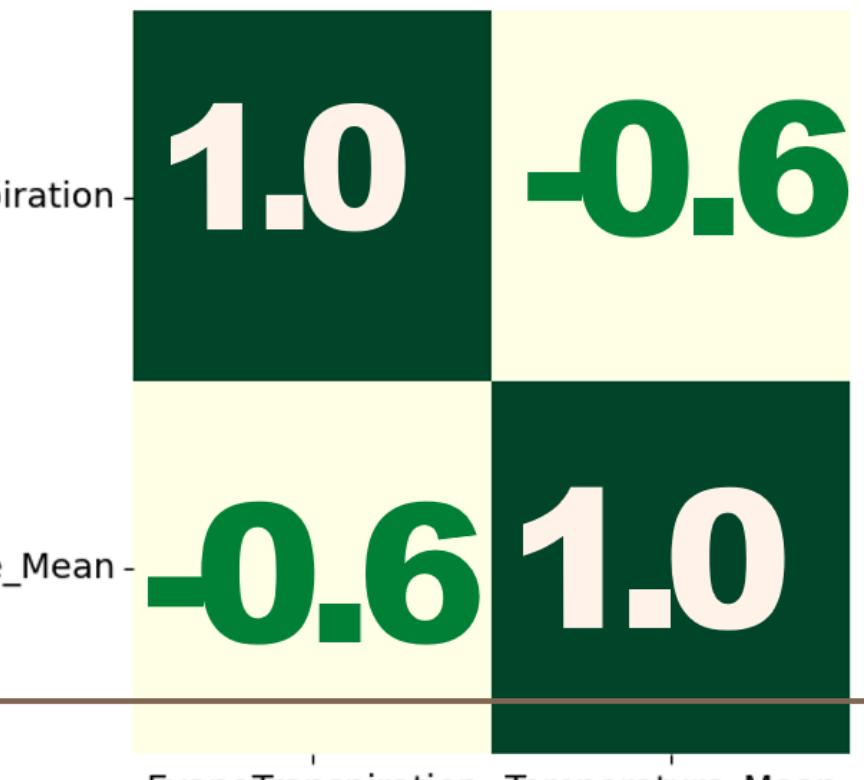
Correlation Analysis is done. Different curves are plotted to analyze the trends of the data and to find the relation between different variables. We chose Input (AOD, NDVI Mean and Evapotranspiration) to determine Output (Future Mean Temperature).

REGRESSION ANALYSIS

The future values of the selected values are determined with the help of Linear Regression. The curves are fitted quarterly. Future trends of the input variables are determined.

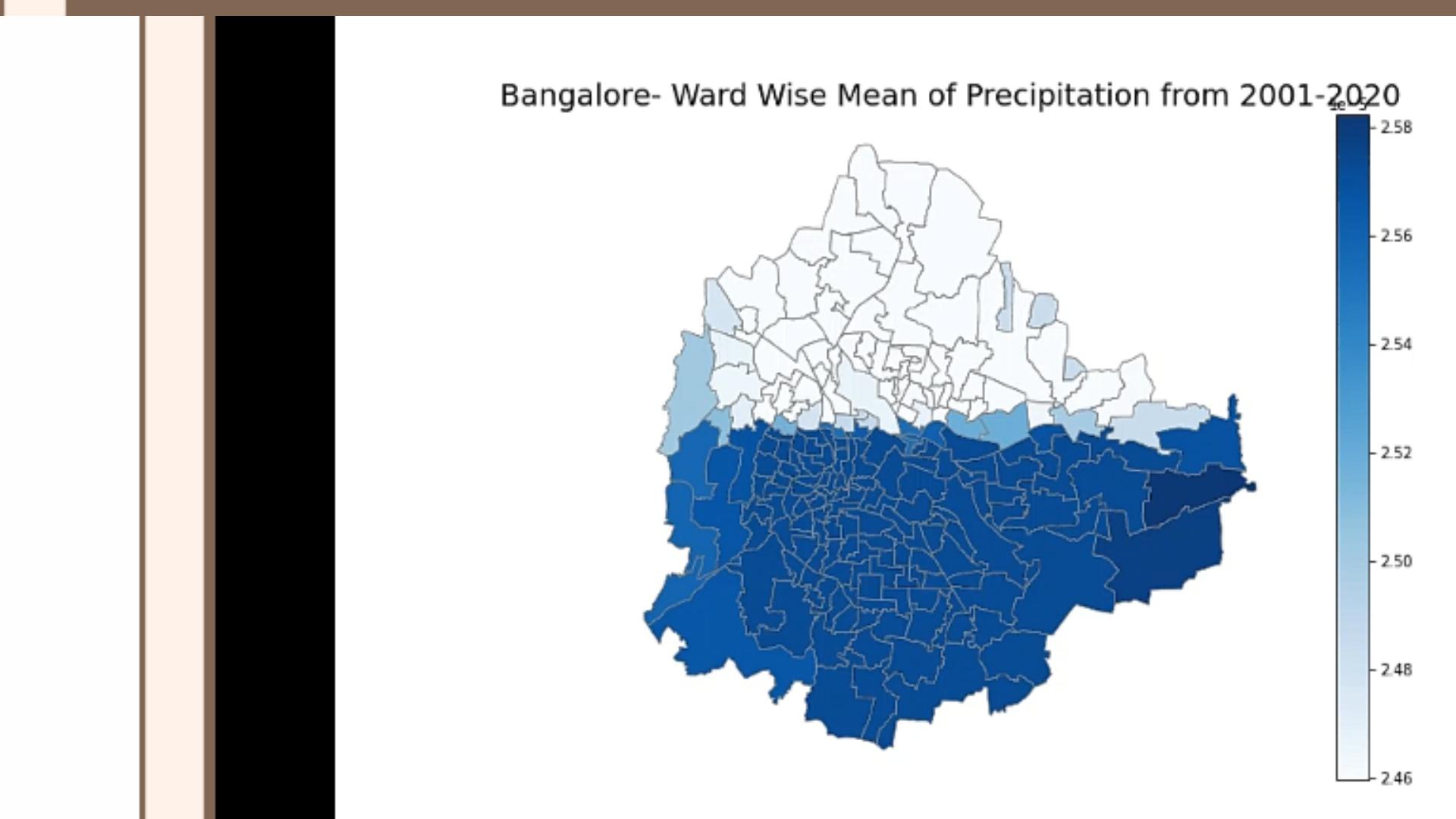
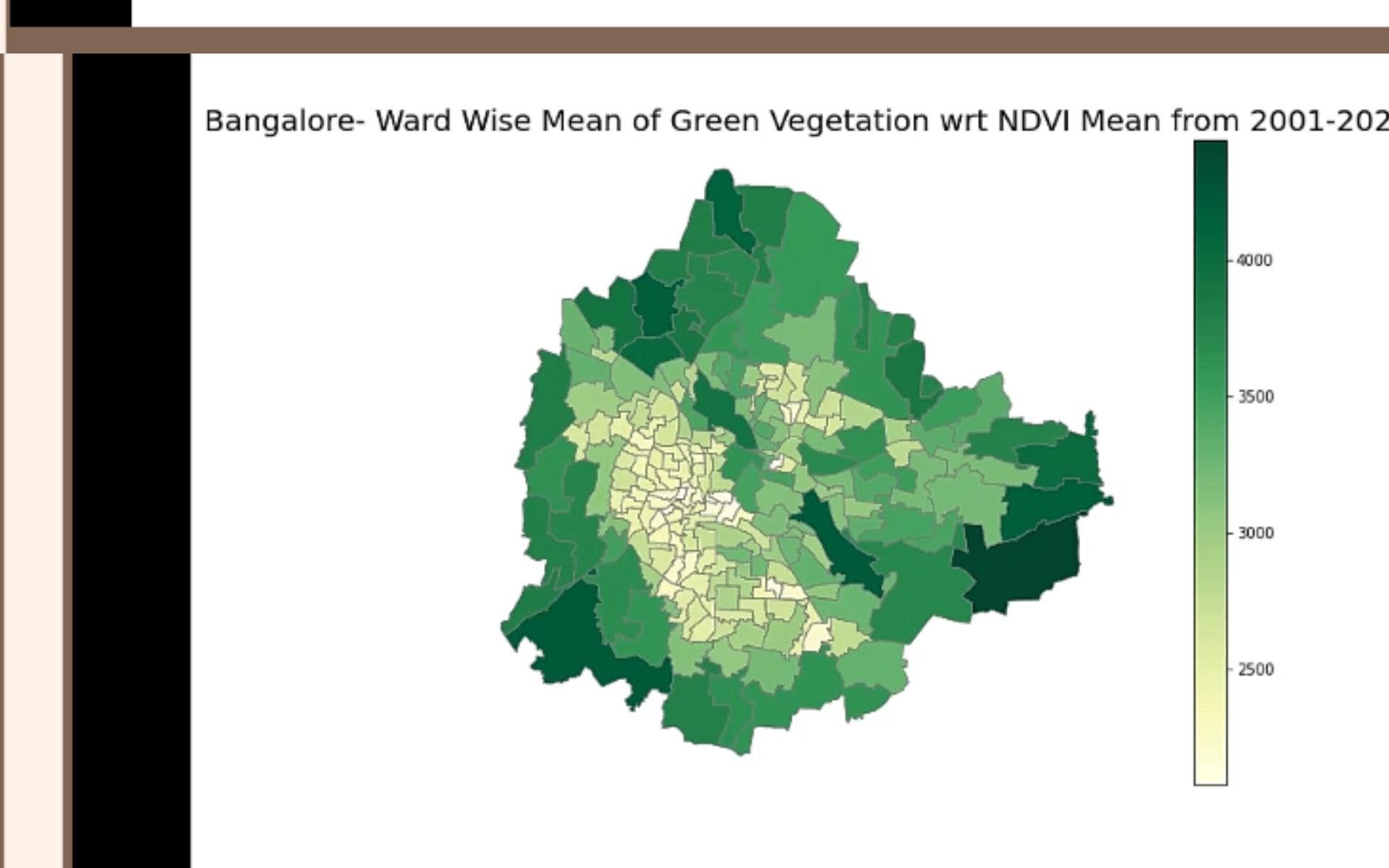
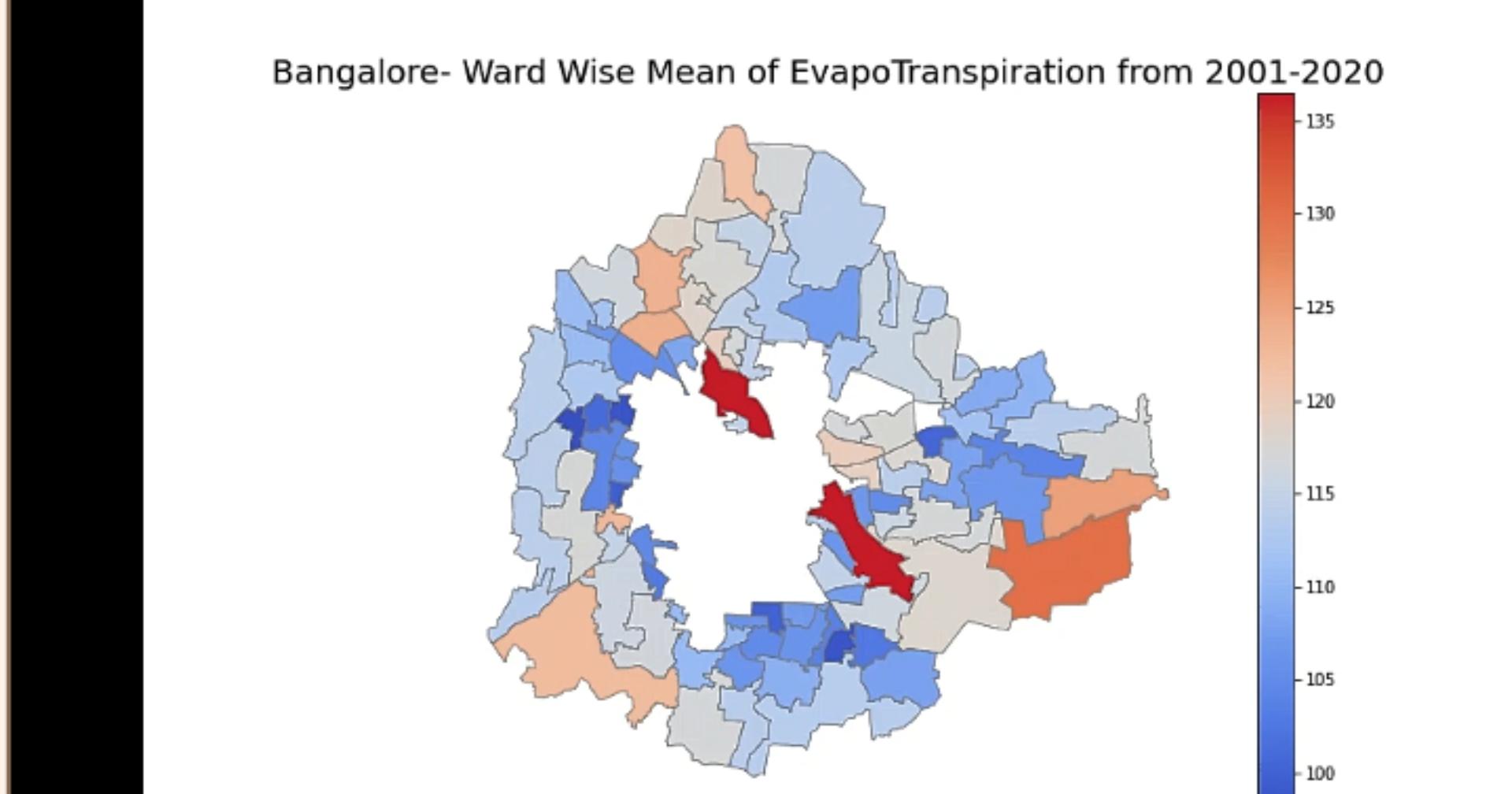
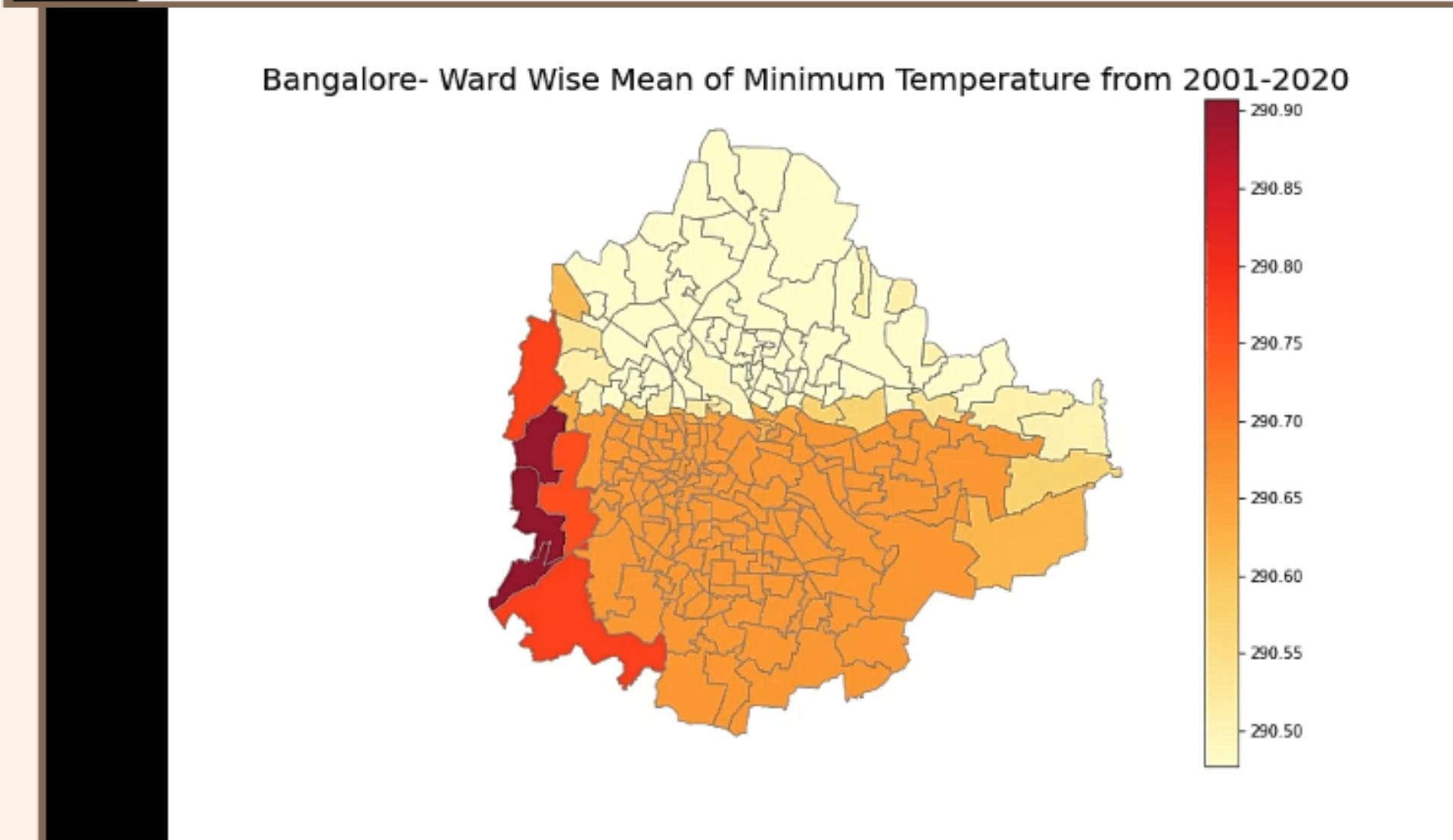
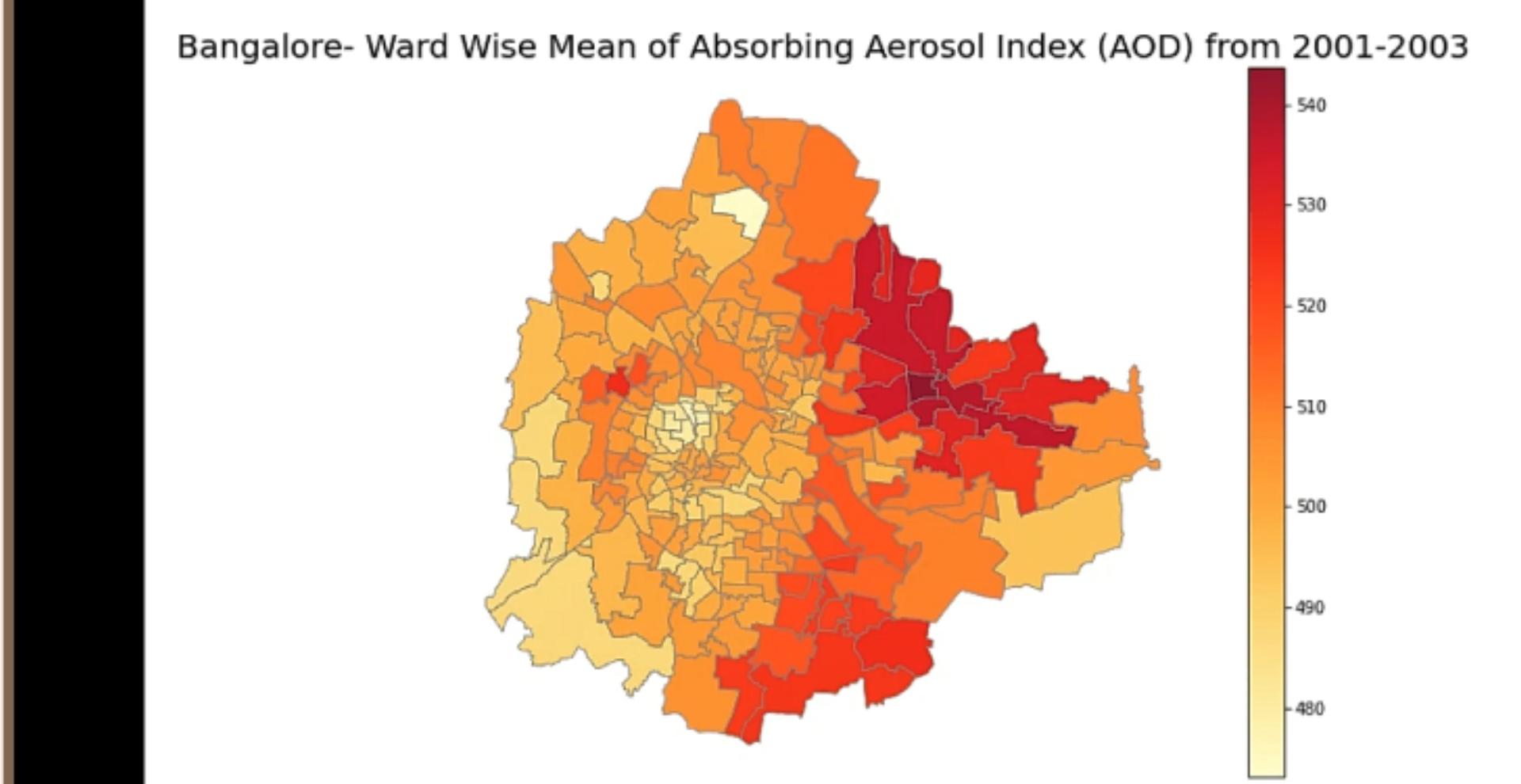
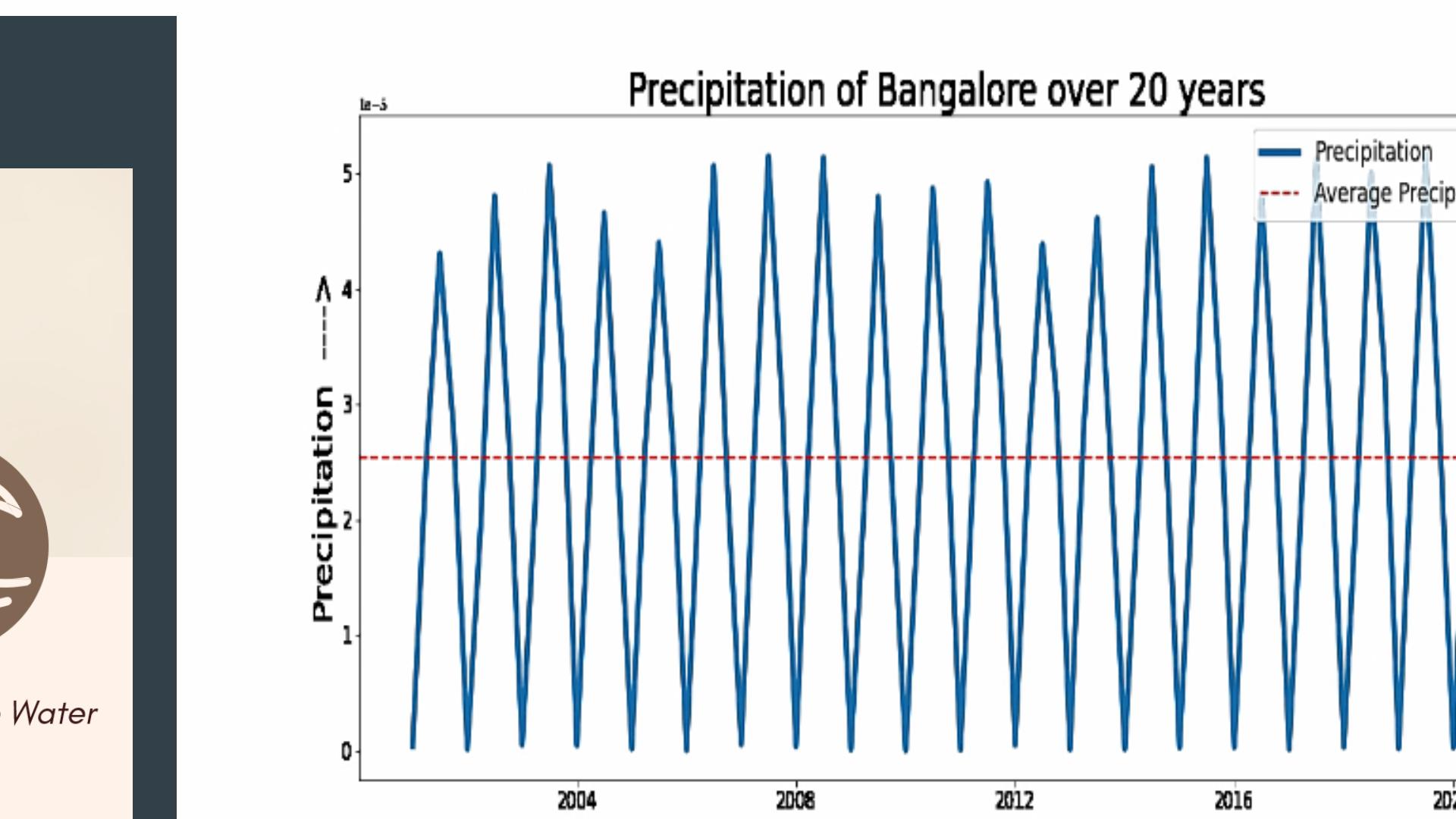
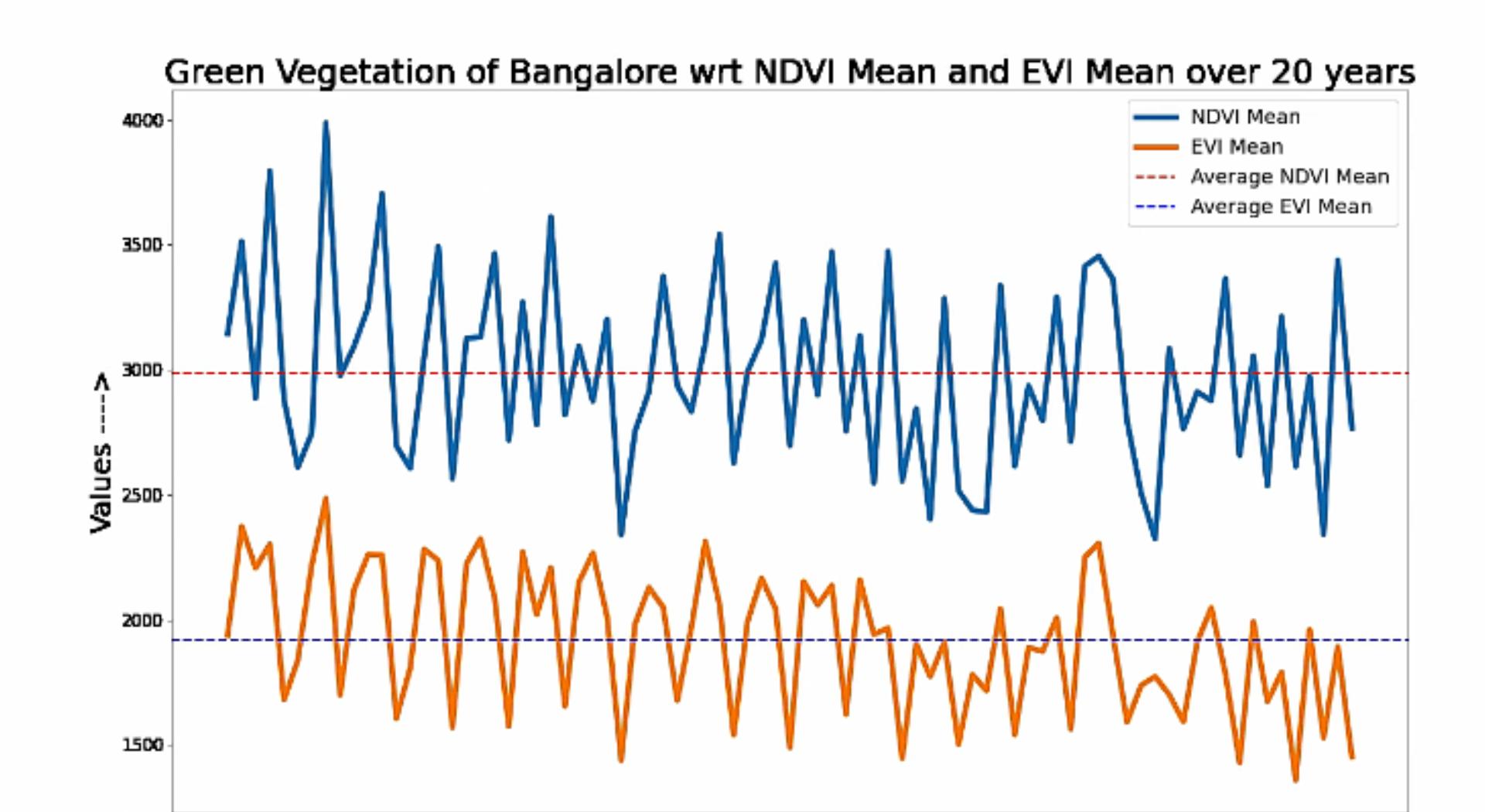
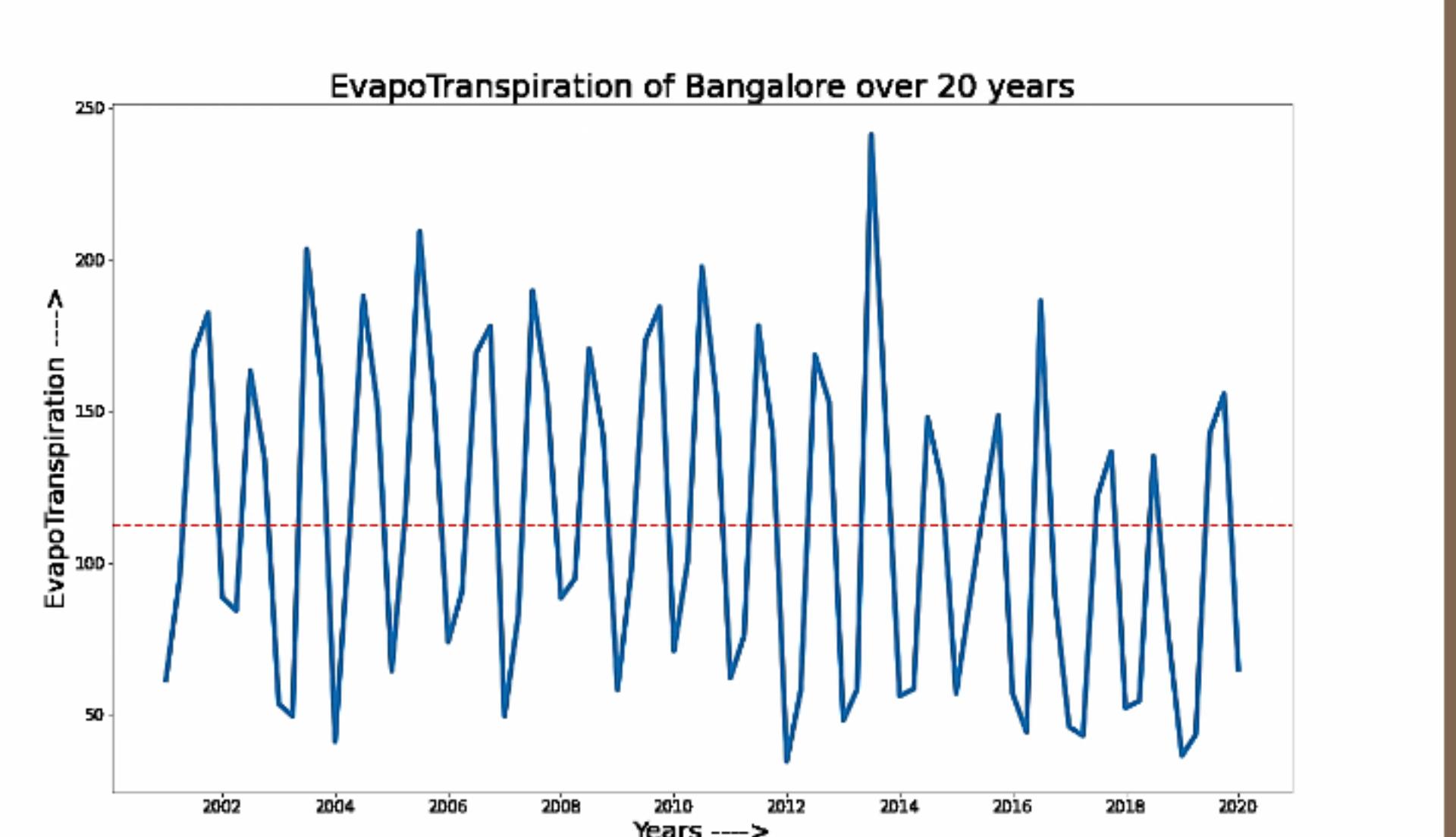
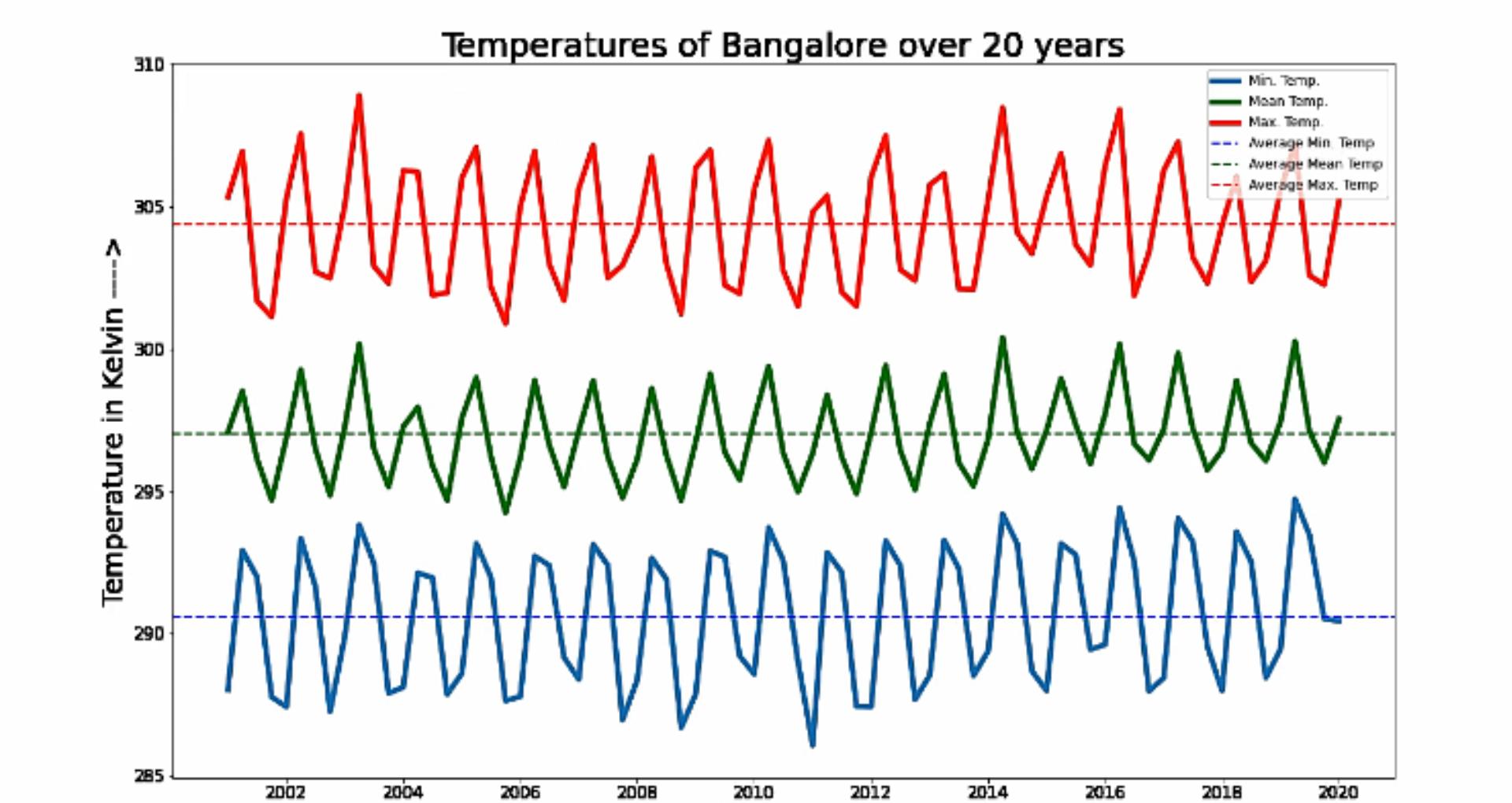
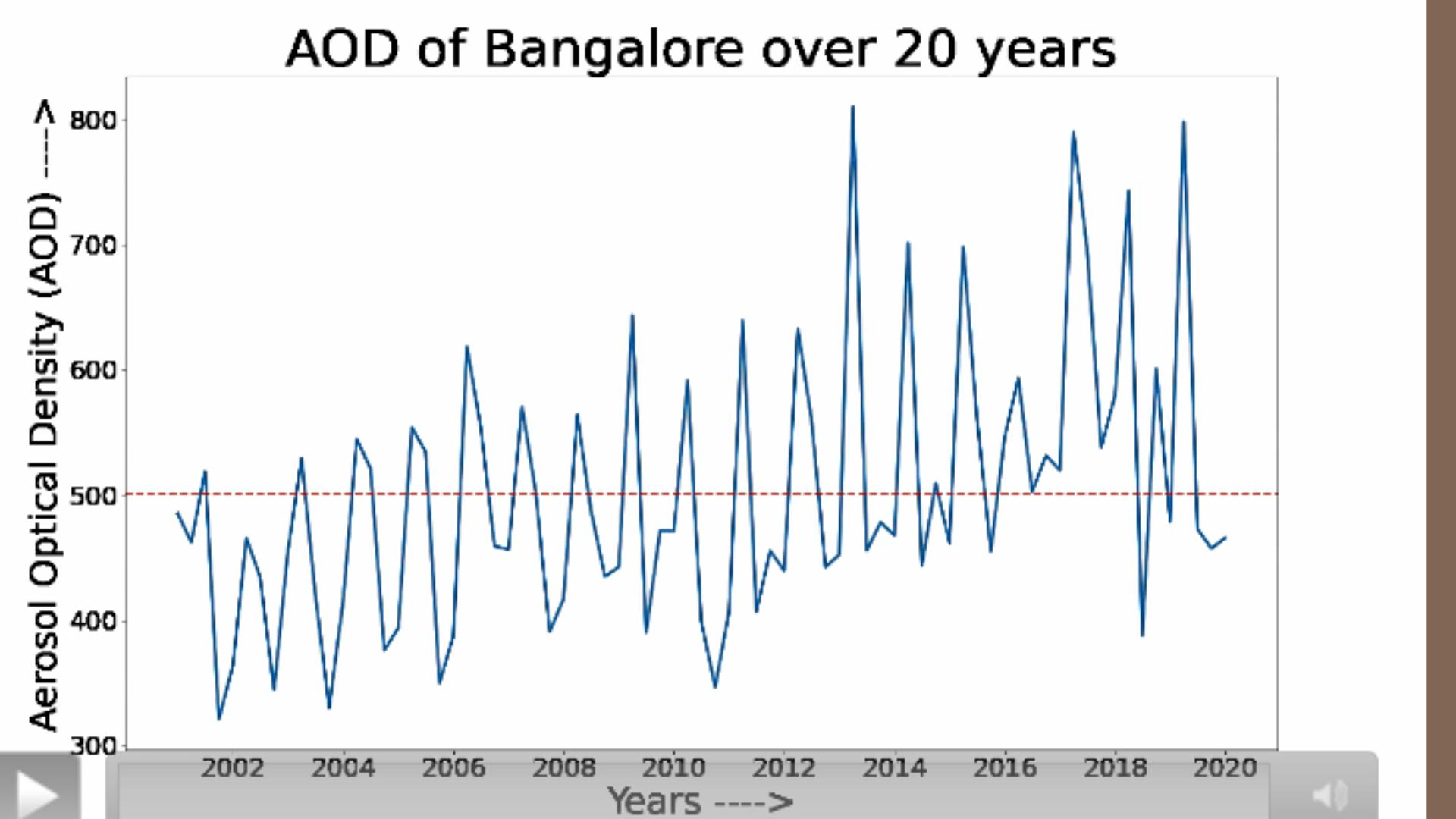
FINAL OUTPUT

With the future and past values of the input variables, the future mean temperatures are predicted, using Linear Regression and Support Vector Regressor. The curves here too are fitted quarterly.



REASONS FOR NEGATIVE CORRELATION

- Cold and Dry Climate
- High Altitude of 920m (3000ft) above sea level (the highest among the major cities of India)
- Higher Wind Speeds
- Far from Large Water Bodies



29.52%

DECREASE IN EVAPOTRANSPIRATION

5.68%

INCREASE IN RAINFALL

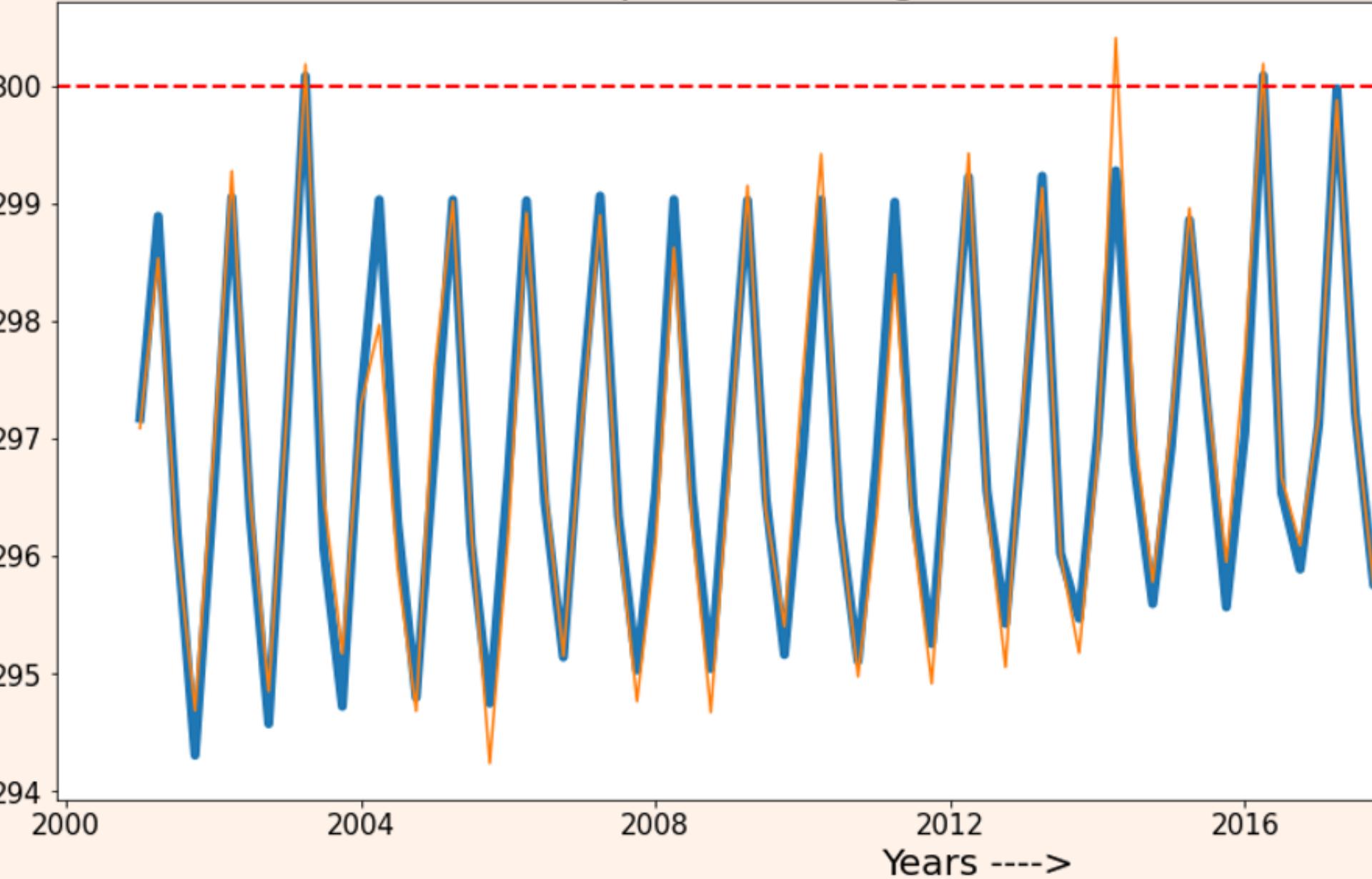
2.87%

INCREASE IN TEMPERATURE

8.13%

DECREASE IN GREEN COVER

Mean Temperature Regression Curve For Bangalore



PROJECTED MEASURE OF TEMPERATURE

2.28%

PROJECTED INCREASE IN MEAN TEMPERATURE IN °C OF 2020-23 COMPARED TO 2001-19

The projections are of just the Mean Temperature of Bangalore. Newer peaks of Maximum Temperature are attained almost every year as of now. In 2020, Bangalore touched the maximum temperature of 33.4° C, which was the highest in the last 150 years.

30.03%

INCREASE IN DUST AND SMOKE

2.87%

DECREASE IN GREEN COVER

THE THREAT OF INCREASING TEMPERATURE AND ITS FUTURE IMPLICATIONS

EFFECTS OFF INCREASING TEMPERATURE

- There has been a rise of minimum temperature by 2 degrees in the past 20 years. By our model, we can observe that the mean temperature has risen by over 1.25 °C
- The temperature was above 300K only 3 times before 2020
- But the trend shows consistent peak above 300K every year after that.

CLIMATE CHANGE IS DEFINITELY NOT A MYTH !!!

THE TIME TO REACT TO THE CHANGING CLIMATE AND INCREASING TEMPERATURES IS PASSING AWAY QUICKLY. IF WE DO NOT ACT SOON, THE SITUATION WILL BE OUT OF OUR REACH AND WE HAVE TO FACE THE WRATH OF NATURE.