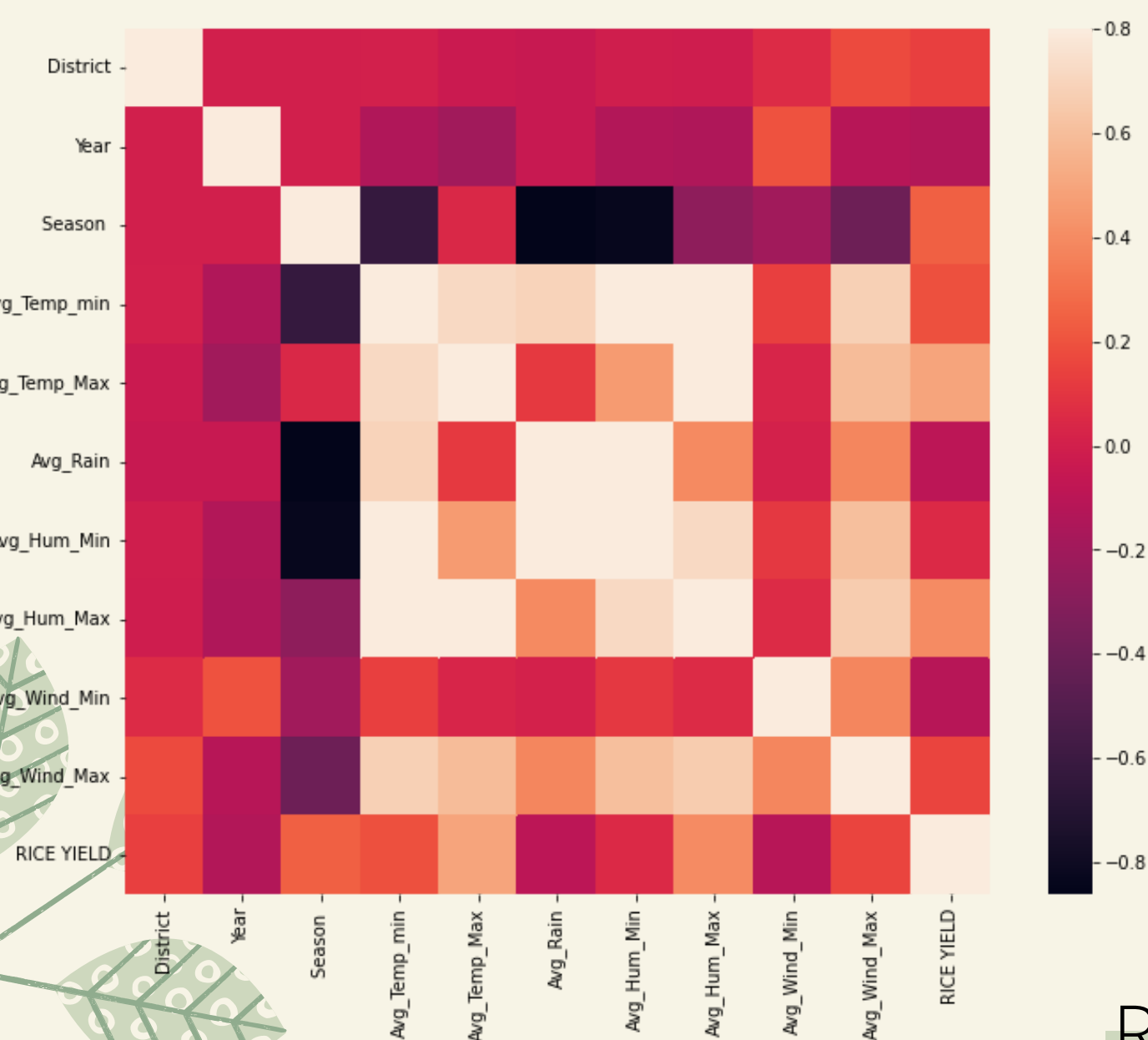
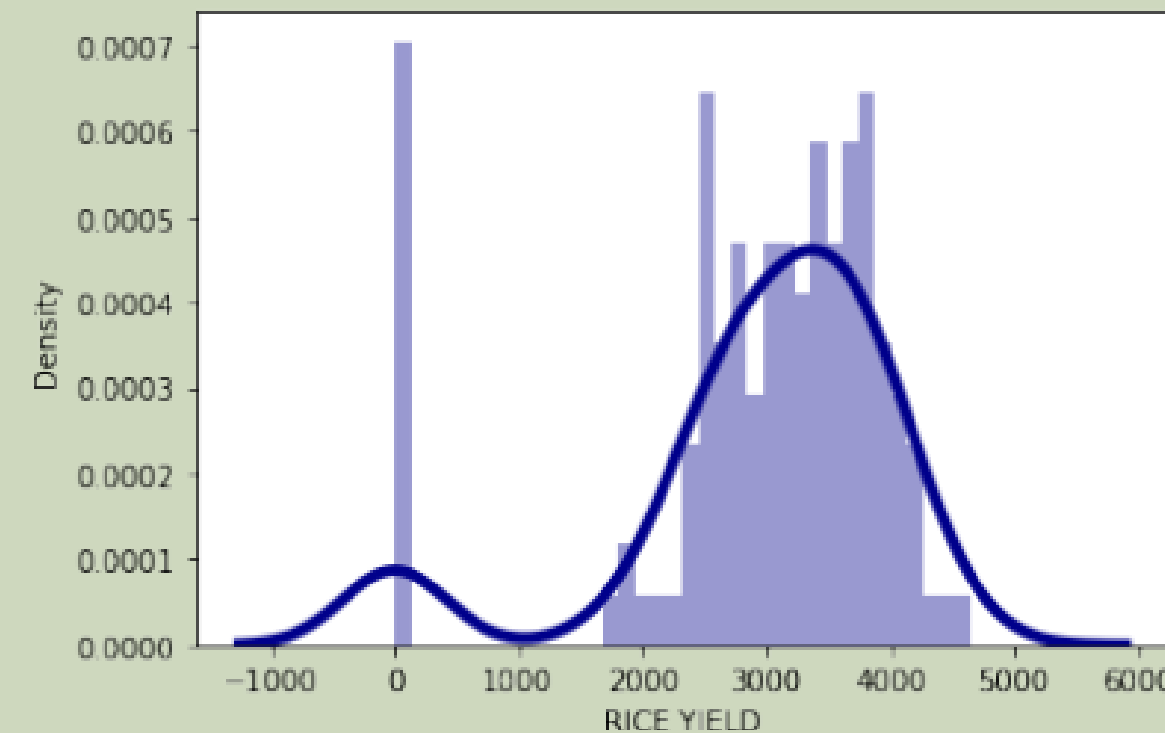


Introduction:

With the growing population of Telangana, the demand for food, livestock, biofuels, fiber, food by-products has increased. There are quite a few challenges for increasing the crop yield. One of the key challenges is Prediction of Crop yield, it remains to be one of the biggest challenges in plant breeding because of the unseen and new environments. The time and expense of generating an extensive data set to represent a wide range of environments and genotype complicate the active research area. But due to the lack of awareness among the farmers. So, we have decided to base our problem statement upon the 2nd goal out of 17 of SDG mentioned by UNSDG, **Zero Hunger**.

We will be tackling this problem by analyzing the Crop yields of different crops produced in Telangana in the span of 2017-19.

We will be predicting the crop yield by utilizing the datasets containing weather reports and crop yield during that time span for each district.



Relations

Conclusion

Initially, we have learnt from the data that the range of Temperature along with the ranges of Wind and Humidity play an important role in out come of crop yield. We have used this information to design a model to predict the future crop yields.

Our Model is going to predict the future crop yield data by studying the previous trends, such as Weather Temperature, Humidity, etc... from the datasets provided by the government. It's accuracy has been increased by using a Machine Learning Algorithm called as Random Forest Regression. If we use R square score as a measure, then our model can be called as a successful one with 91% accuracy.

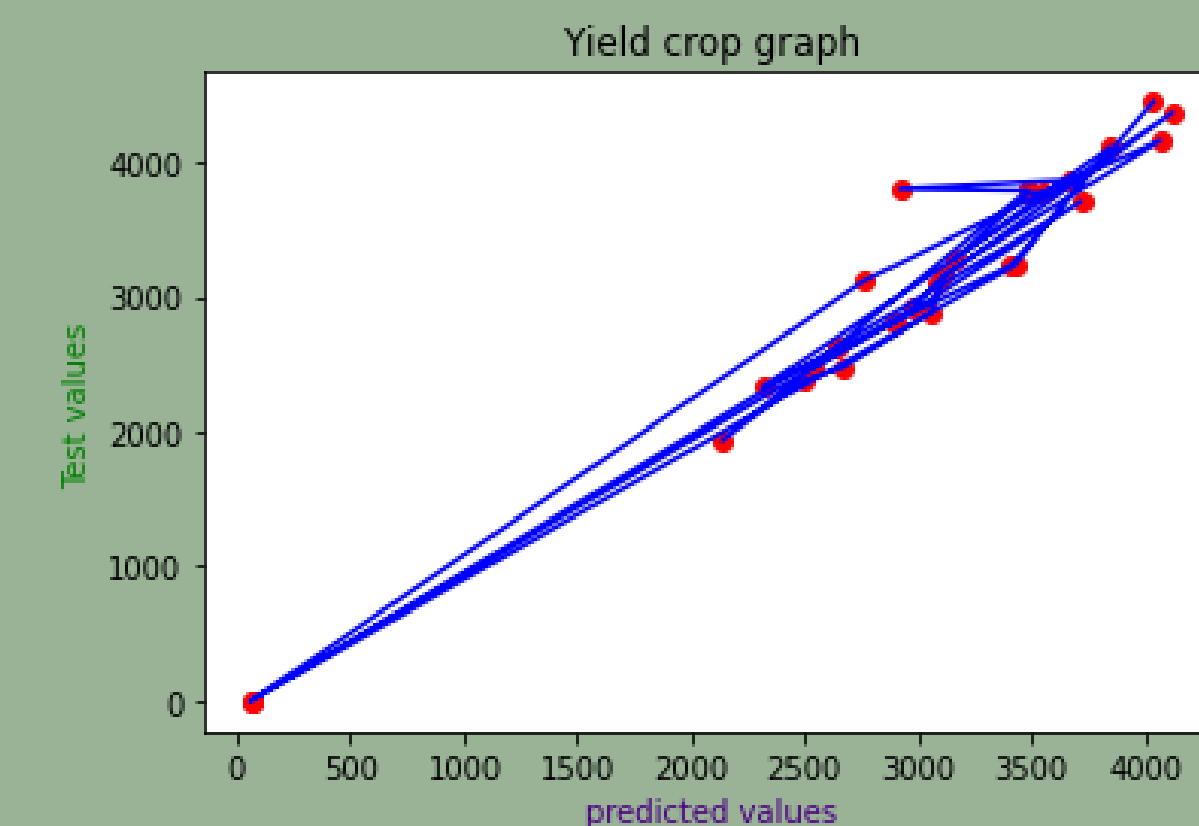
Methodology

Python Libraries used:

- Pandas
- Numpy
- Matplotlib

Type of Algorithms used : Random Forest Regression, XGBoost which contains 3 parameters.

We used Label Encoder and OneHot-Encoder to encode the categorical data like Districts, Seasons while using Padas to read and manipulate the data. Numpy also played an important role by allowing us to fit the model into a 2D array so that it can be displayed in the form of various graphs by using MATPLOTLIB. The different seasons Rabi and Kharif are distinguished and the weather parameters like Maximum and Minimum temperatures, humidity and so on were optimized by taking the Arithmetic mean, and each were added as attributes, which then help us train the model to predict for total yield.



Actual vs Predicted

