

SDG 2 Zero Hunger

Data for social good Hackathon-2021

Created by: Nancy Meshram

Introduction

In this challenge I provided the visualization and policy recommendations.

I used prompt 1: Precision farming for improving yield background

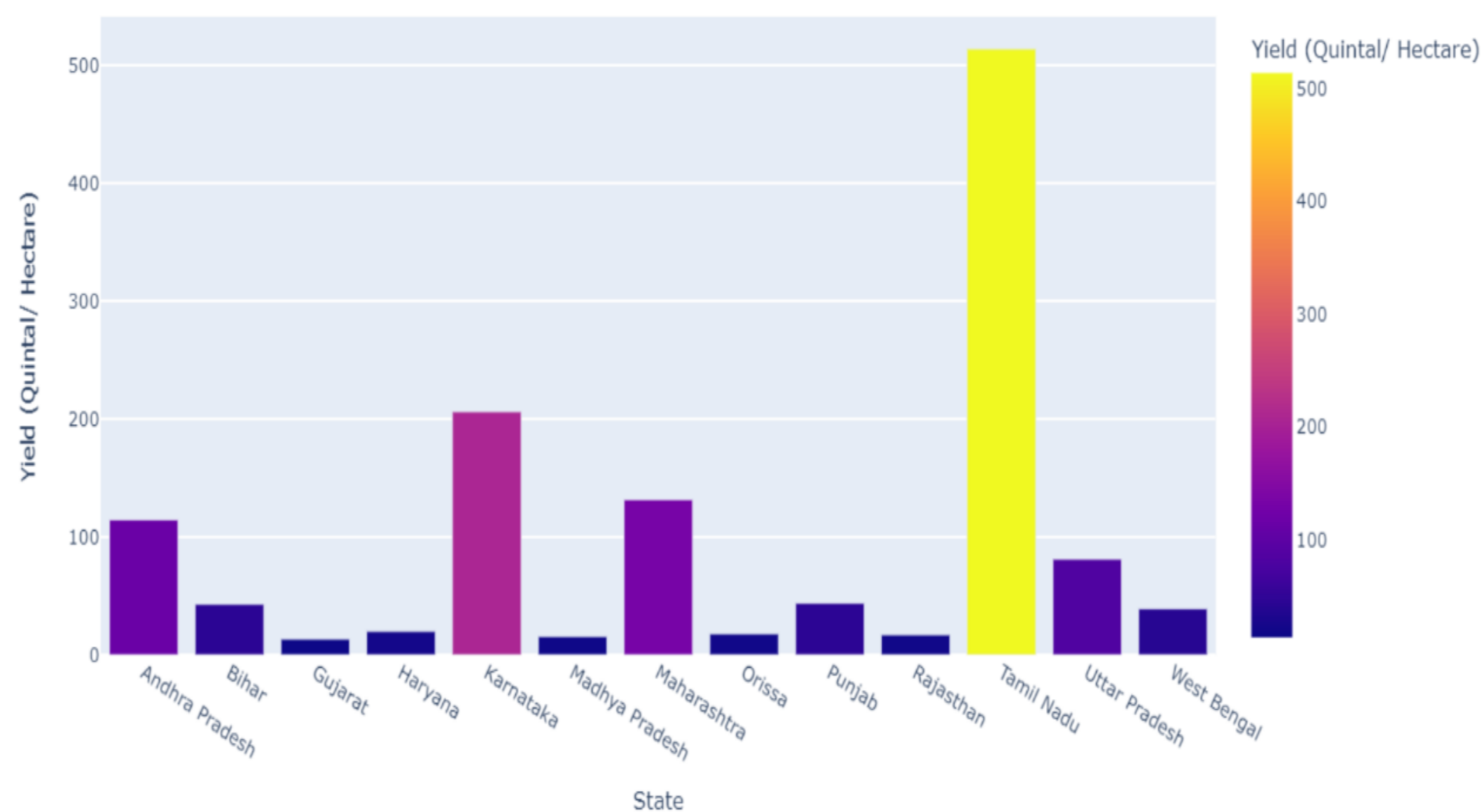
The farm output is the yield which is dependent on the crops, cost of cultivation cost of production, etc.

Using these variables, predicting the historical yield through an ML model could give us statistical relationships between variables that affect the yield of a particular crop.

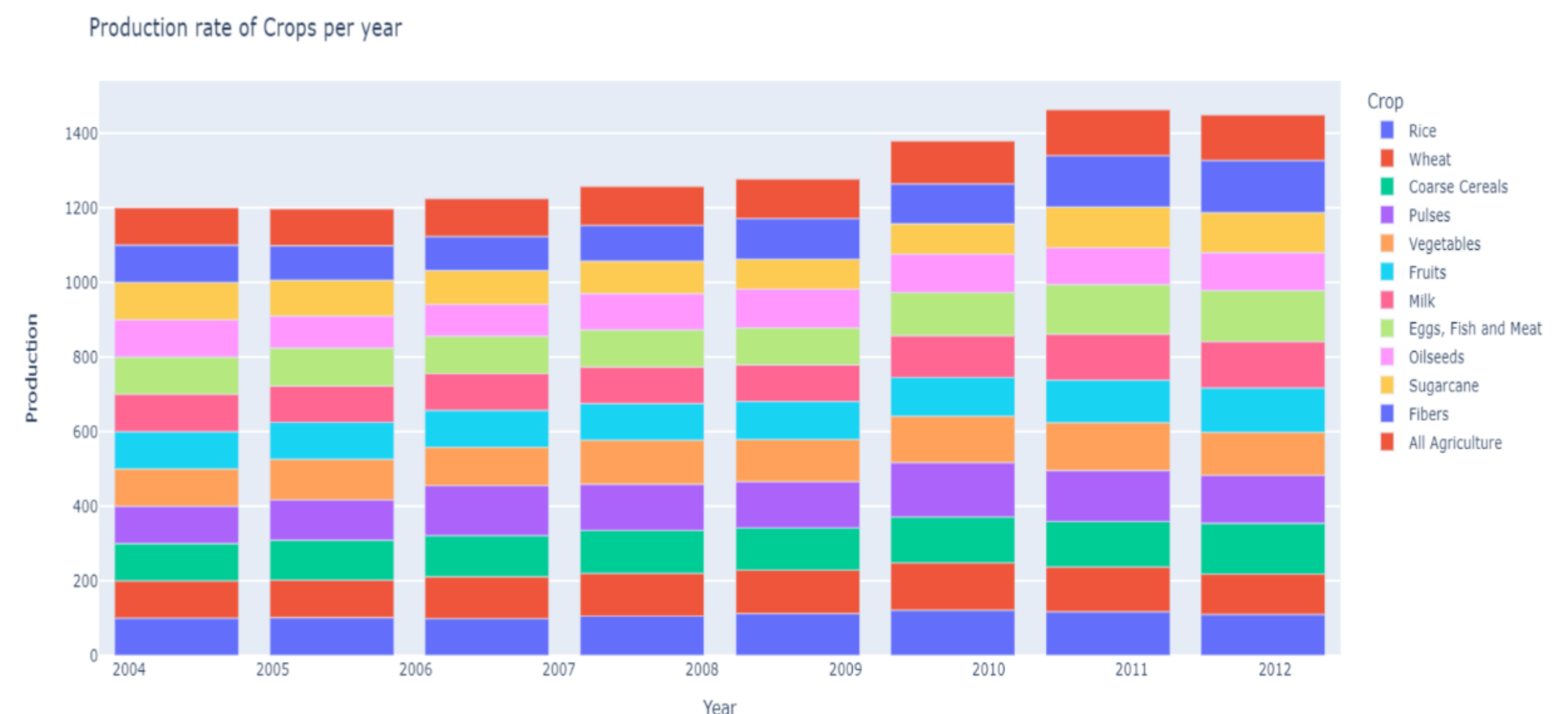
Objectives:

- 1) Identify variable(s) in accordance with their relevant influence on crop yield.
- 2) Recommend best practices to maximize the yield for a particular crop
- 3) Build a Machine-Learning model to predict yield.
- 4) Provide insights & policy recommendations based on the overall findings.

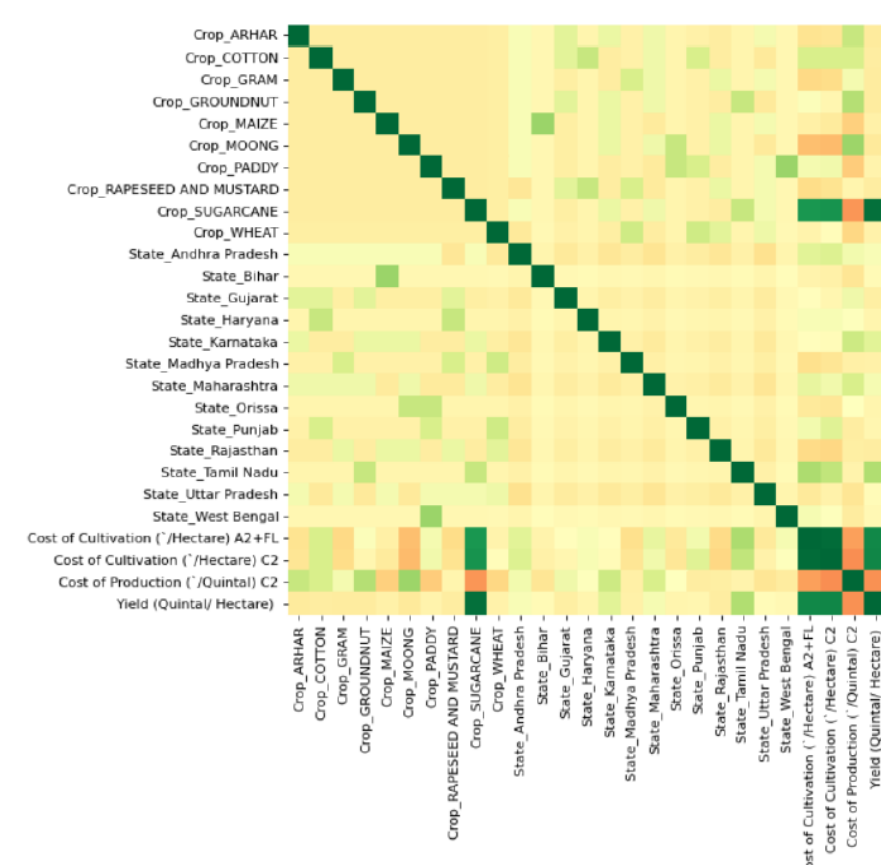
State-wise Yield (Quintal/ Hectare)



Methodology



I used various visualization techniques using plotly, seaborn, matplotlib to understand the relationship and trends across the data.



I have chosen a dataset containing the agricultural crops and their production, cost of cultivation, yield per year for the different states of India are given.

For the prediction of the yield I have used datafile(1) dataset which I have uploaded in the github. It includes Crops, State, cost of cultivation, cost of production as the feature variables. I have considered the Yield feature as the target variable.

So finally I used all these features and built a Machine learning model which predicts the yield of the crop based on the above features. I used Random forest regression model to predict the yield and achieved an r squared score of 0.95.