

PROBLEM STATEMENT:

Agriculture is the backbone of the Indian economy and provides a basic need for human survival. Many farmers in India are not receiving the projected crop output due to weather fluctuations and other factors. So in this case, farmers must have timely advice to estimate future crop productivity, and analysis must be performed to assist farmers in maximizing crop production.

SOLUTIONS:

Solution 1:

The dataset includes parameters such as state name, district name, humidity, temperature, yield, and so on. The **random forest algorithm** is used to perform and implement region-specific agricultural production analysis. After the successful training and testing of the dataset the accuracy of the model will be determined.

1)Crop Module: This module will provide the list of available crops. On selection of each one of it will give the detailed description of the crop.

2)Soil Module: This module will provide the list of available soils. On selection of each one of it will give the detailed description of the soil.

3)Weather Module: In this module by entering the city name the user can get the live weather forecast. Open weather API is free open-source weather data. By using weather API key can fetch the current or historical weather data.

4)Predict: This predicts module allows the user to select the district name, crop name, soil type and area. After selecting these values user can click the predict button to get the estimated yield.

Solution 2:

Another approach for this case is to use **KNN (K-Nearest Neighbour) algorithm**.

Step 1: The datasets have been collected and refined based on commonality uses such as location, crop, Area, soil type, temperature, humidity etc. From these parameters name of the crop and net yield rate of the crop can be predicted.

Step 2: Based on various analyses the parameters location, soil type and area will be used as input for prediction. The attribute soil type specifies the type of soil in a particular region such as Coastal alluvials, Laterite soil and Dark brown alayey soil and the attribute location specifies the 4 different areas such as Mangalore, Kodagu, Hassan, Kasargod.

Step 3: By using KNN algorithm, the particular crop will be analysed and predicted by taking various parameters into an account such as soil type area and location.

Step 4: By analysing and predicting the crop name and price of particular crop can be found out. This helps the farmers to take the correct decision to sow the crops such that yield rate can be increased.