# PROBLEM STATEMENT

Agriculture is the most important sector in today's life. Most plants are affected by a wide variety of bacterial and fungal diseases. Diseases on plants placed a major constraint on the production and a major threat to food security. Hence, early and accurate identification of plant diseases is essential to ensure high quantity and best quality. In recent years, the number of diseases on plants and the degree of harm caused has increased due to the variation in pathogen varieties, changes in cultivation methods, and inadequate plant protection techniques.

The main goal of smart agriculture systems using IoT is to increase productivity on a large scale. Right from precision farming, autonomous tractors, extensive flood control methods through IoT sensors and forecast, the IoT based smart agriculture is the need of the hour. It helps to improve the irrigation facilities that increase crop productivity, offering end-end IoT agriculture monitoring.

Artificial Intelligence is almost used in every sector like primary, secondary and tertiary. As there is a famous thing called Agriculture that is the Backbone of our nation, this saying remains a nightmare for every farmer and a proper importance is not given in some areas. Coming to the main part, when a fresher in agriculture starts harvesting the crops, the person is not aware of any diseases related to crops or plants.

This is not only for starters, this can be useful for the traditional farmers too. Now-a-days due to climate changes, the soil's prosperity changes and new diseases in plants start to rule the crops. The farmers go with pesticides as a better option but the mere pesticides can't be the only option for every disease. Before knowing the exact infection one cannot take any decisions.

So, to make it easier and detect the exact disease with high accuracy by the real-time image of the plant we came up with this project. Adding to this a crop recommendation system can be deployed as a whole in an application which will be useful for the agriculturalist, farmers etc..