# **Synopsis: Eco-Fertilization**

## Agriculture plays an important role in national economic growth. Agriculture contributes 17-18% to India’s GDP and ranks second worldwide in farm outputs. Plants requires fertilizers and fertilizers replace the nutrients that crops remove from the soil. Without the addition of fertilizers, crop yields and agricultural productivity would be significantly reduced. That's why mineral fertilizers are used to supplement the soil's nutrient stocks with minerals that can be quickly absorbed and used by crops. The farmers usually have little control over the usage of fertilizers. There is need for proper guidance for optimal usage of these fertilizers and is required by farmers in order to get more yields and prevent wastage.

## There is a relationship between rainfall intensity and nutrient loss for different fertilizer treatments following each rainfall event. Timely and moderate rainfall can be beneficial to dissolve dry fertilizer and move nutrients into the soil rooting zone, but excessive rain can increase runoff potential and leaching potential of nutrients such as nitrate, sulfate, chloride, and boron.

## The prime objective of “Eco-Fertilization” is to provide useful insight for fertilizer usage by considering short- and long-term weather forecast and reduce environmental pollution by deaccelerating the process of leaching. The application takes multiple input from the user such as crop, area etc. and apply machine learning algorithms to predict the amount and usage of fertilizers.

## The Implement Phase is most important phase of the project cycle. It commences after the completion of preparation and planning phase. It is a phase where the execution of the project is carried out. In this Project, The tools and technologies required for execution are as follows:

## Python,

## Matplotlib,

## Random forest algorithm and

## Neural Networks.