

## **IDEATION:**

With the increase in the demands of agricultural techniques and needs, there prevails a struggle to ensure efficiency in usage of water in farm, ways of reducing soil erosion and ensuring minimum degradation, or even minimizing energy input. The need for sustainable agriculture, that is becoming really necessary for farmers to invest a lot in knowledge and more sophisticated machines and devices. Wireless sensors are used to monitor the soil moisture level and humidity including with which weather forecasting is performed for functioning of motor to supply water in agricultural fields. Through Smart agriculture using IOT, the percentage of crop production is effectively increased by this automatic monitoring system.

This paper explores how a smart agriculture can be installed in place of traditional agriculture. Wireless sensors are used to monitored the soil moisture level, pH level of the soil, soil temperature etc. After monitoring, these real time data are transferred by zigbee network to a control system (raspberry pi) to balance the parameters of the soil of the crop field according to the requirements. Zigbee protocol gives the input of the raspberry pi which analyzes the data properly and according to the requirements it gives the output. This output is able to pump the required amount of the water to the crop field, balanced the pH level by spreading the précised type of fertilizer and also checks the temperature of the soil.