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Smart Farmer Iot Enabled Smart Farming Application – Problem Statement

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PROBLEM STATEMENT:

- The traditional agriculture and allied sector cannot meet the requirements of modern agriculture which requires high-yield, high quality and efficient output. Thus, it is very important to turn towards modernization of existing methods and using the information technology and data over a certain period to predict the best possible productivity and crop suitable on the very particular land. The adoptions of access to high-speed internet, mobile devices, and reliable, low-cost satellites (for imagery and positioning) are few key technologies characterizing the precision agriculture trend.
- Precision agriculture is one of the most famous applications of IoT in the agricultural sector and numerous organizations are leveraging this technique around the world.
- IoT has been making deep inroads into sectors such as manufacturing, health-care and automotive. When it comes to food production, transport and storage, it offers a breadth of options that can improve India's per capita food availability. Sensors that offer information on soil nutrient status, pest infestation, moisture conditions etc. which can be used to improve crop yields over time.

Some of the sample problem statements related to Agriculture & allied sectors where IoT application will be beneficial are given below.

1. Tea Industry

a) Use of pesticides / fertilisers more than required quantity leads to rejection of the produced Tea.

b) Plucking coarse leaves will lead to drop in the quality of made Tea.

2. IoT enabled micro irrigation and farming land health logging system

History-based soil health parameters like soil moisture, pHlevel, temperature etc. are very essential of organic cultivation. IoT applications may assist in controlling the irrigation pump, opening and closing water flowing gates and also data logging the soil health conditions for present and future purpose.

3. Revolutionising the field of Agriculture using integrated technology

Overuse of pesticides and fertilizer in agricultural fields leads to destruction of the crop as well as reduces the efficiency of the field increasing the soil vulnerability toward pest. IoT applications may be used to update the farmer/user about type & quantity of pesticide required by the crop.

4. Eco-Harvester for fruits

The Eco-harvester injects an artificial PME enzyme activator which allows the detachment of only the mature fruits from the branches of the tree leaving behind the immature ones and thereby allowing them to mature, thus minimising harvesting loss. IoT application may be used to keep track when and which part of the field is ready for the process.

5. Smart Greenhouses

Greenhouse farming is a methodology that helps in enhancing the yield of vegetables, fruits, crops etc. Greenhouses control the environmental parameters through manual intervention or a proportional control mechanism. IoT applications can immensely benefit the farmers using greenhouse technology and make their work simple & easy.