SMART FARMING SYSTEM

AN INDUSTRY THAT FEEDS YOU IS AN INDUSTRY THAT NEEDS YOU

AGRI-TECH

KODICROPS

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PROBLEM STATEMENT

- Farmers are pressurized to meet the rising demand for more food. The population is expected to rise to above 10 Billion by 2025 and agricultural production will need to expand by 70%. Farmers are also expected to satisfy consumers changing taste and improve the quality of the food produced.

- Farmers need to cope and adapt with climate change,which affect farmers ability to grow food.Increasing volatile weather and extreme events (like flood and droughts) change growing seasons and limit the availability of water,allow weeds,pest and fungi to thrive.

- Agriculture operations waste about 60% of water consumed each year(mainly due to traditional irrigation methods).Ideally under-watering or over-watering can cause yield reduction.This calls for the need to adopt smart irrigation system.

- Lowering water quality due to pollution thereby reduces the quality of the crops and at times contaminates the food grown that can cause various health hazards when consumed.Hence monitoring the quality of water for irrigation is a vital factor to improving agriculture.

SOLUTION

- In this project, we are going to build a Smart Farming System using IoT. The objective of this project is to offer assistance to farmers in getting Live Data.
  When the IoT-based agriculture monitoring system starts, it checks the Soil moisture, temperature, humidity, and soil temperature. It then sends this data to the IoT cloud for live monitoring.
  If the soil moisture goes below a certain level, it automatically starts the water pump.
  It checks the temperature/climatic conditions and gives an Rain Alarm in case of heavy rain, floods or cyclone.
  The water monitoring system will help in monitoring the water quality used for irrigation (which will be fed into our irrigation system).

- This Live Data of soil will also help in analyzing the yield and thus helps in suggesting the right fertilizers, pesticides controls, upcoming risks or new crops that can be planted there and also whether the water needs to be treated.

- Target audience:
  Farmers, Nursery owners

- Expected Results:
  1. Right amount of quality water on time to the crops.
  2.No loss of large amount of crop due to weather changes.
  3. Proper knowledge of soil and right fertilizers, crop, pesticides controls.
  Hence a very good quality and large yield which will help farmers and consumers.

What does it do?

We use an iot sensor the gets the Live Data and monitors the crops.

1. Smart Irrigation system
2. Water quality monitoring
3.Rain/Drought Alarm(using temperature)
4. Clear idea of what products can be used by soil monitoring.

How?

Using IoT we give Live Data of the crop by Monitoring the soil, moisture and temperature.Our Unique selling point is that it covers all 3 main problems and gives Live Data every few minutes.

Why?

We have faith and belief in our solution as it is for a good cause which helps farmers and make their work easier. Farmers feed us food and their happiness is our responsibility. So increasing their profit is essential.

TECH STACK

- The smart farming is based on IoT that will be implemented using NodeMCU ESP8266 ,with other components like DHT11 Sensor,Moisture sensor,DS18B20 Sensor Probe,LDR,Water pump.
- The data will be managed and displayed on the **adafruit.io** cloud service.
- Open weather API will be required to get weather forecast.
- The water monitoring system will use Arduino UNO along with components Gravity Analog pH sensor,DS18B21 temperature sensor.

BUSINESS PROSPECTIVE

Business prospective:
There are 14.5cr farmers and 159.7 million hectares arable land in India.
Farming contributes to 18% to country's GDP.
Getting an innovation and advance technology in this will help in improving the yields and increase in revenue by exporting the quality crops.
Using advance technology will help farmers cope up with increase in demand in future.
Hence our device will help in increasing the revenue as it shall give more precise data and hence better and high quality yield and selling and advertising this device to various states, organizations etc will increase our profit as well.