V.S.B Engineering College, Karur

Electronics and Communication Engineering

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Literature Survey

Title: Smart Farmer - IoT Enabled Smart Farming Application

Domain: Internet of things

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ABSTRACT:

With the rapid development of the world population, large area of land is utilized to develop housing and the ability of producing food is reduced. Farming has become crucial in present trend and keeps food on the tables. Farming with IOT help in mitigating the shortage of food by demanding the existing land for stronger utilization at minimum cost. Smart farming is a notion that quickly snaps on the agricultural field. This offers an automated farming techniques, useful data collection and high-rigor crop control. Sophisticated sensor based architecture is proposed to monitor the conditions of the farms by using sensors and the information extracted from the sensors is stored on the internet. This stored to a period of time. Based on this evaluation, the necessary improvements can be made with better farming conditions in future.

INTRODUCTION:

In India, farming is the only source that generates revenue for the agriculture community. Two-thirds of our population is based on farming for a livelihood. So for this reason, farming has become the back bone of Indian economy . Due to many problems, farmer suicides are leading into a large number across India because of the problems are faced as insufficient rainfall, irregular monsoons. These are not responsible and can be set directions to deliver by technology. At the right time, some of the problems can be solved by giving proper advices to the farmers. To harvest crops, some of the requirements like fertilizers, labours, pesticides, seeds and water are necessary. Based on the water availability, the main task of a farmer is to raise the capital. When they are unable to raise the capital in their own path, they depend on other sources like banks and some financial organizations. At this situation, the farmer depends on the crop for crediting the payments that are taken from banks and financial organizations. This may create very tough conditions if the crop fails. And sometimes, this may results pushing the farmer into some of the critical situations and causes relentless stress.

This type of crop failures can be avoided and some of the preventions are to be noticed with the available resources before dumping. There is only way to address these types of problems and increase the quality and quantity of crop production is by utilizing the IoT sensing technology. Farming with IOT helps in mitigating the shortage of food by demanding the existing land for stronger utilization at minimum cost.

LITERATURE SURVEY:

> ➢ The author(1) says, With the recent advancement of the Internet of Things (IoT), it is now possible to process a large number of sensor data streams using different large-scale IoT platforms. These IoT frameworks are used to collect, process and analyse data streams in real-time and facilitate provision of smart solutions designed to provide decision support. Existing IoT-based solutions are mainly domain-dependent, providing stream processing and analytics focusing on specific areas (smart cities, healthcare etc.). In the context of agri-food industry, a variety of external parameters belonging to different domains (e.g. weather conditions, regulations etc.) have a major influence over the food supply chain, while flexible and adaptive IoT frameworks, essential to truly realize the concept of smart farming, are currently inexistent.
> ➢ The author(2) says, Internet of things (IoT) is a promising technology which provides efficient and reliable solutions towards the modernization of several domains. IoT based solutions are being developed to automatically maintain and monitor agricultural farms with minimal human involvement. The article

presents many aspects of technologies involved in the domain of IoT in agriculture. It explains the major components of IoT based smart farming. A rigorous discussion on network technologies used in IoT based agriculture has been presented, that involves network architecture and layers, network topologies used, and protocols. Furthermore, the connection of IoT based agriculture systems with relevant technologies including cloud computing, big data storage and analytics has also been presented. In addition, security issues in IoT agriculture have been highlighted. A list of smart phone based and sensor based applications developed for different aspects of farm management has also been presented.

➢ The author(3) says, Internet of Things (IoT) is present and future of every field impacting everyone's life by making everything intelligent. It is a network of different devices which make a self-configuring network. The new developments of Smart Farming with use of IoT, by day turning the face of conventional agriculture methods by not only making it optimal but also making it cost efficient for farmers and reducing crop wastage. The aim is to propose a technology which can generate messages on different platforms to notify farmers. The product will assist farmers by getting live data (Temperature, humidity, soil moisture, UV index, IR) from the farmland to take necessary steps to enable them to do smart farming by also increasing their crop yields and saving resources (water, fertilizers). The product proposed in this paper uses ESP32s Node MCU, breadboard, DHT11 Temperature and Humidity Sensor, Soil Moisture Sensor, SI1145 Digital UV Index / IR / Visible Light Sensor, Jumper wires, LEDs and live data feed can be monitored on serial monitor and Blynk mobile. This will allow farmer to manage their crop with new age in farming.

REFERENCE:

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2. Farooq, M. S., Riaz, S., Abid, A., Abid, K., & Naeem, M. A. (2019). A Survey on the Role of IoT in Agriculture for the Implementation of Smart Farming. *Ieee Access, 7,* 156237-156271.
3. Doshi, J., Patel, T., & kumar Bharti, S. (2019). Smart Farming using IoT, a solution for optimally monitoring farming conditions. *Procedia Computer Science, 160,* 746-751.