SmartFarmer - IoT Enabled Smart Farming Application

Literature Survey

TITLE	SOURCE	FINDINGS
Smart Farmer System	https://www.irjet.net/archives/V7/i4/IRJET-V7I4589.pdf	It described several benefits and challenges of IoT have been identified. They also presented the IoT ecosystem and how the combination of IoT and DA can be enabled in smart agriculture.
IoT in Agriculture : Smart Farming	https://www.researchgate.net/publication/329438453_IoT_in_Agriculture_Smart_Farming	In smart farming, threshold values of temperature and soil moisture can be programmed into a microcontroller-based gateway to control water quantity. The system is powered by photovoltaic panels and can have a duplex communication link based on a cellular Internet interface that allows data inspection and irrigation scheduling to be programmed through a web page.
IoT-Enabled Smart Agriculture: Architecture, Applications, and Challenges	https://www.mdpi.com/2076-3417/12/7/3396/pdf	In the smart agriculture domain, besides the main problems of sensing, collecting data, and controlling devices to respond to the real farming environment, data storage and processing are also important problems and face some challenges In reality, the number of collected data is huge, and traditional data storage, organization, and processing solutions are not feasible. Therefore, big data processing solutions need to

		be researched and applied for smart agriculture
SMART FARMING STICK	https://www.studocu.com/in/document/i-k-gujral-punjab-technical-university/electronics-devices-circuits/project-02-final-report/28934160	With advancement in technologies IoT frameworks and platforms has been used in many domains like smart healthcare, smart cities, etc. but still in agriculture domain large scale use of IoT solutions is not seen in many countries. To describe some of the IoT based solutions proposed by some of the researchers.
IOT Based Smart Agriculture Monitoring System	https://d1wqtxts1xzle7.cloudfront.net/53284195/37_1488609467_04-03-2017-with-cover-page-v2.pdf?Expires=1663435354&Signature=KlkNwxpAAwFcyiEpIV9Fxf1FUY7dDH5WTPDOramzuieLGAcuuSX6Y5zsHCRAA~rWbETa-wgD4eWUmUE1yWxjSeS5dlzmx94zQRHlB~Tw8f~tBi~kFHEZOB-m7Dq88gh2fA4qUk2SdVwW2STonDUakkv2iq07Y1F3ONi~9hGq2sp51gTsUFr0ED6iJ7C330KLQNkPJgYN2c2aQzBChKxMx8vDy6SAAxJsM0QxL3GR3sMZONkqYMay0zwWfVasm4~hTN7kyI0xzrjyohkoUGAviX9gWnxtcTDupLiDNHuTpDsaSaI7z2mDLMfVFksErozNgYgzcBn3BGbMkOINgICkTg__&Key-Pair-Id=APKAJLOHF5GGSLRBV4ZA	Smart farming by linking a smart sensing system and smart irrigator system through wireless communication technology.It proposes a low cost and efficient wireless sensor network technique to acquire the soil moisture and temperature from various location of farm and as per the need of crop controller to take the decision whether the irrigation is enabled or not.

PROBLEM STATEMENT:

Food production and its safety are a major problem in the agricultural sector. A lot of crops easily get damaged causing a huge amount of financial loss for the nation and even for the farmers (small scale or at large scale). Hence, we developed a stick that will solve all these problems in a better way. This stick will perform all the activities that will help our farmers in many different ways and will pave a way for Smart Farming into the nation. This stick will provide live data of various different parameters, live temperature, soil moisture, humidity, rainfall updates etc., that will help farmers in deciding the right time for their farming.

Following are certain additional features that is added to our stick:

1) Crop Water Management.
2) Precision Agriculture.

In order to perform agriculture activities in an efficient manner, adequate water is essential. Agriculture IoT is integrated with Web Map Service (WMS) and Sensor Observation Service (SOS) to ensure proper water management for irrigation and in turn reduces water wastage. High accuracy is required in terms of weather information which reduces the chances of crop damage. Agriculture IoT ensures timely delivery of real time data in terms of weather forecasting, quality of soil, cost of labor and much more to farmers.Agriculture IoT systems assures farmers with accurate environmental data via proper live data monitoring of temperature, moisture, plant growth and level of pests so that proper care can be taken during production.