

LITERATURE REVIEW

SMART FARMER-IOT ENABLED SMART FARMING APPLICATION

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ABSTRACT

The world population growth is increasing the demand for food production. Furthermore, the reduction of the workforce in rural areas and the increase in production costs are challenges for food production nowadays. Smart farming is a farm management concept that may use Internet of Things (IoT) to overcome the current challenges of food production. This work uses the preferred reporting items for systematic reviews (PRISMA) methodology to systematically review the existing literature on smart farming with IoT. The review aims to identify the main devices, platforms, network protocols, processing data technologies and the applicability of smart farming with IoT to agriculture. The review shows an evolution in the way data is processed in recent years. Traditional approaches mostly used data in a reactive manner. In more recent approaches, however, new technological developments allowed the use of data to prevent crop problems and to improve the accuracy of crop diagnosis.

INTRODUCTION

Agriculture is considered as the basis of life for the human species as it is the main source of food grains and other raw materials. It plays vital role in the growth of country's economy. It also provides large sample employment opportunities to the people. Growth in agriculture sector is necessary for the development of economic condition of the country. Unfortunately, many farmers still use the traditional methods of farming which results in low yielding of crops and fruits. But wherever automation had been implemented and human beings had been replaced by automatic machineries, the yield has been improved. Issues concerning agriculture have been always hindering the development of the country. The only solution to this problem is smart agriculture by modernizing the current traditional methods of agriculture. The proposed a system which is useful in monitoring the field data as well as controlling the field operations which provides the flexibility. The paper aims at making agriculture smart using automation and IOT technologies.

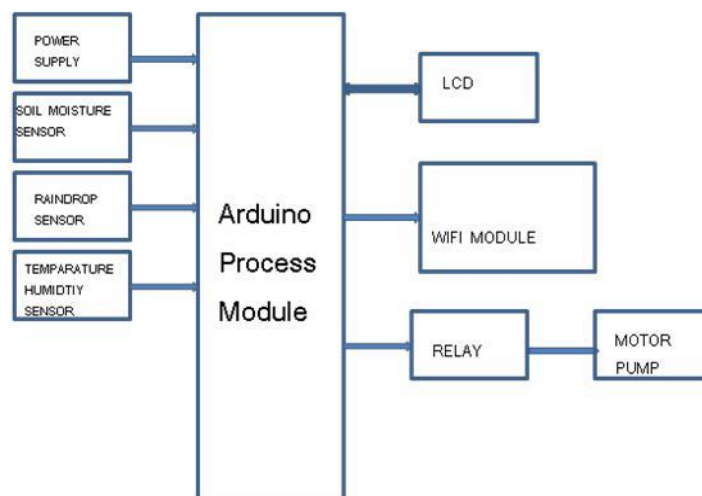
EXISTING SYSTEM

Most rural people, agricultural activities continue to be one of their main livelihood strategies. Production of food crops is not dependent on any formally acquired knowledge of farming but is solely based on indigenous agricultural knowledge passed from generation to generation through experience and careful observations. Resource-poor farmers, especially in rural areas, follow traditional farming methods to produce their food crops and these are specifically tailored to suit their environments. Household members are the main source of farm labour with men mainly responsible for ploughing activities while the bulk of planting, weeding and harvesting activities is the responsibility of women. Crop protection against pests is done through traditional methods where farmers mix some combinations of pest control made from locally available resource to minimise losses. However, there are no weather monitoring,

moisture dampness and water management, they depend on rains and flow of water upstream to downstream and canal watering system. As the agriculture has turned to more labour intensive, and skilled people have migrated to urban community for livelihood and comfort living, left the traditional agriculture farmers much more expensive and riskier. We heard yield versus suicidal of farmer. To convert loss making traditional farming into high crop yielding and profit making proposed smart agriculture system is brought out.

PROPOSED SYSTEM

As traditional farming are more labour intensive, Risky and resulting to suicidal due low yield or Act of God. Small farmers unaware of the smart agriculture system big fishes and corporate community are enjoying the advantages of smart agriculture technology. Thanks to Pandemic Covid-19 which returned the migrants back to their respective villages and having no source of income are happily willing to come back to their original agriculture farming as their occupation. At this time when the Smart Irrigation System is an IoT based device which is capable of automating the irrigation process by analysing the moisture of soil and the climate condition (like raining) can be incorporated by small players in farming and enjoy high yield profit earning. IOT advancement helps in agrarian societal information on conditions like atmosphere, temperature and productivity of soil, harvest web watching engages area of weed, level of water, bug acknowledgment, animal interference into the field, alter improvement, cultivation. The farmers can know get details of farm conditions with the help of remote sensor frame work and WSN(Wireless Sensor Networking) systems sitting at home or any other place.



CONCLUSION

The IoT-based agricultural production system has built on the long-standing desire of farmers to ensure their land remains productive into the future. It also addresses the community's expectations and concerns for safe food and for environmental protection. An agricultural production system for the agricultural production using IoT technology and implemented it as GUI visualization software was designed. The IoT based agricultural production system through correlation analysis between the crop statistical information and agricultural environment information has enhanced the ability of farmers, researchers, and government officials to analyze current conditions and predict future harvest. Additionally, agricultural products quality can be improved because farmers observe whole cycle from seeding to selling using this IoT based .

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