

## Assignment No: 02

**Assignment Title:** Project Literature Survey

### Introduction

Agriculture is the foremost only field industry where the recent improvement in technology has not been welcomed in huge number. One of the main reasons regarding this issue is poor lethargic condition of the farmers in developing countries say India. The scarcity of agricultural products is also increasing day by day due to two main reasons, first one is overpopulation and the second one is urbanization. Considering the case of overpopulation, it increases the demand of agricultural resources and with the case of increasing population it emphasizes the better growth of farming products but due to globalization the most of agricultural land is taken by big industries and they convert these land into nonagricultural land. Basically, the rural area for farming is decreasing day by day and with that decrease the agricultural resources are also decreasing. Therefore, the need of an hour is to look at the situation carefully and emphasis is given to improve the crop production by consuming the resources conservatively without wasting the existing resources. Smart farming is one such methodology to do it. In this type of farming the crop is fed up with the enough quantity of resources required for it to grow and by taking the calculated amount of time. In normal Traditional farming method, there is a time-based irrigation system i.e. farmer know exactly that after certain limited time (few days) he needs to irrigate his crop. But due to the lack of knowledge farmer is not capable of irrigating his/her field at the exact duration of time which significantly lead to a wastage of water. Hence to overcome such issue smart farming method is employed.

To overcome the issue of traditional farming, a soil moisture detection sensor is implanted at the observation site to get the soil moisture content and with this the crop is irrigated accordingly. Similarly, soil moisture sensor, temperature sensor, Humidity sensor and pH sensor are used around the plant to get the desired value, which helps in reducing the exploitation of extra resources used initially in traditional farming. Soil moisture is important in determining the physical structure of the plant whereas all the other sensors play a major role in photosynthesis.

This system basically suggests an idea to generate the sensor node which can send the data to the central node i.e. to the Amazon AWS cloud. This system consists of methodology used in smart farming and after visualizing the exact percentage of resources required for

crop to appropriately predict the crop yield using various data mining techniques. Data Mining is a procedure to retrieve useful information from very enormous datasets. This technique is used to predict the crop production in advance so that the farmers could take an immediate measure accordingly as the crop demands. It also helps government to get the value of exact MSP (minimum selling price) for farmers. It aims to predict the crop prediction by using various regression and classification methods like multiple linear regression, SVM, Random forest, KNN etc. With these techniques of data mining, the effect of various parameters (sensor node parameters in general) on the prediction of crop production has been studied.

## Literature Survey

- **IEEE Paper**

Sr. No.	Paper / Publication	Author	Year
1.	Application of interpretive structural modelling for analyzing the factors of IoT adoption on supply chains in the Chinese agricultural industry	Danping Lin ; C. K. M. Lee ; W. C. Tai	2017
2.	Application of the Internet of Thing in Green Agricultural Products Supply Chain Management	Lin Li	2011
3.	Developing Smart Farm and Traceability System for Agricultural Products using IoT Technology	Konlakorn Wongpatikaseree; Promprasit Kanka ; Arunee Ratikan	2018
4.	Developing an Agricultural Internet of Things System Using Low Power Wide Area Technology	Yuki Matamura ; Shinji Chiba	2019
5.	The Implementation of a Practical Agricultural Big Data System.	Xingqi Wang ; Kai Yang ; Tailian Liu	2019
6.	Providing Smart Agricultural solutions to farmers for better yielding using IoT	M.K. Gayatri ; J. Jayasakthi ; G.S. Anandha Mala	2015

7.	IoT Enabled Efficient Detection and Classification of Plant Diseases for Agricultural Applications.	R. Deepika Devi ; S. Aasha Nandhini ; R. Hemalatha ; S. Radha	2019
8.	Iot Based Status Tracking and Controlling of Motor in Agricultural Farms.	Sri J. Balakrishna ; Himamsu Marellapudi ; N. Alivelu Manga	2018
9.	Smart Farming Implementation using Phase based IOT System.	R. Deepa ; Vaishnavi Moorthy ; Revathi Venkataraman ; Soumya Snigdha Kundu	2020
10	Research on Optimizing Transportation of Fresh Agricultural Products by Internet of Things.	Ying Zhang	2020

## Conclusion

This system showed the transformation of system which can collect the data from sensor node with the help of IoT in the field of agriculture. This system successfully able to sense the data and sending the data locally to AWS cloud which is further access by user in his/her custom-made website. Data mining techniques are used to predict the crop production in advance so that farmer always got to know the extent of accuracy of their farming techniques. Various methods of regression and classification to get the output and their plot are plotted successfully. In future whether showing the data in custom made website can show the data in mobile app. Further, it detects the disease of the crop by using the concept of image detection. With that suitable type of fertilizer and pesticides is used to eliminate the disease. Artificial Intelligence and neural network could also be used as a regression method that promises to give more precise results.

## References

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