

## AgroHelp: A Responsive System for Agriculturists

Kaveri P. Barole<sup>1</sup>, Akshay D. Kodollikar<sup>1</sup>, Prashant K. Marne<sup>1</sup> and Mrs. Shweta Joshi<sup>2</sup>

**Abstract**— AgroHelp system is designed to provide support for advanced farming techniques as well as use of appropriate fertilizers. AgroHelp also provides information and support for pesticides to be used for prevention. It finds the solutions to cure the deceases of crops as per query. Main objective of the system is to make agriculture knowledge available to farmers as and when required. The knowledge is supported by the database built up using frequently asked questions and respective solutions. AgroHelp proposes system which makes use of advanced mining techniques .The system can be used on mobile phones with internet facilities as well as on basic phone having SMS support.

**Keywords**:- AgroHelp, Database, Mining techniques.

### I. INTRODUCTION

As we know that basic occupation of India is farming and still people who rely on agriculture are using the traditional ways of recommendations for agriculture. Recent innovative technologies for farming are not reaching to the farmers because of two reasons, either because they are illiterates or they are unaware about it. so that farmers are losing productivity of crops. Till now the recommendations that farmers are getting are based on interaction between farmers and experts only, that is one to one interaction for example Krushi Call center. In the proposed system we provide solutions to the farmers by using past agricultural knowledge with the help of mining concepts and mobile awareness farmers living in villages are not aware of the technologies available in agriculture base of the proposed system is multitier client server architecture .

### II. LITERATURE REVIEW

In last few years there were many technologies imposed to help farmers. Here discussed the concepts which were used. In this section all these work is discussed and relates to the proposed work later on.

<sup>1</sup>Kaveri P. Barole, Akshay D. Kodollikar, Prashant K. Marne; Batchler of Computer Engineering student, Flora Institute of Technology (FIT) Khopi Pune, Savitribai Phule Pune University- 412205, Maharashtra, India.

<sup>2</sup>Mrs Shweta Joshi Assistant Prof., Flora Institute of Technology (FIT) Khopi Pune, Savitribai Phule Pune University- 412205, Maharashtra, India.

#### 1. Crop cultivation information system based on mobile phones [1]

This paper defines how mobile phones can be used in the field of agriculture. It proposes the system which helps farmers for crop cultivation process. The proposed system in this paper provide automatic and semi-automatic ontologies which helps to improve the production rate. It provides the help for cotton cultivation process at each level in detail. Ontologies are used to process the complex requests of farmers and generate recommendations. During the survey we came to know about various aspects that can be used for enhancing the farming techniques and production. Change in climate affects the crop cultivation at every stage farmers need to take some preventive actions for decreeing adverse effect of climate change on their crops. The proposed system is advantageous in delivering expert knowledge on smart phones as they found gap between farmers and agriculture experts in different agriculture universities research centers. As we observed the disadvantage of this proposed system is they do not have the facility to provide solutions or results to farmers in regional languages.

#### 2. AgroMobile: A cloud based framework for agriculturists on mobile platforms [2]

In this paper various ways are introduced in which a farmer can utilize Mobile Cloud Computing (MCC) on their handsets using application called AgroMobile, to assist them for relatively better cultivation and marketing. Its main attention focused on crop image

analysis. In this research an Android based mobile devices are used for testing. This paper opens a new dimension in the field of agriculture and irrigation with the help of new technologies, such as image processing, visualization and mobile cloud computing which really contributes in national economy and leads the developing countries to a developed one. The term mobile computing (MCC) is basically combination of two technologies mobile computing and cloud computing. The advantage of the MCC is it overcomes the limitations of mobile processing power and data storage, helps extending battery life by moving the computations on cloud servers. Also MCC increases security level of every mobile devices and increases mobility. The disadvantage of the proposed system is it works with the android os only and it cannot run on other platforms.

### **3. Web based recommendation system for farmers [3]**

This paper proposes the use of data mining techniques to provide recommendation to farmers for crops, crop rotation and identification of appropriate fertilizer. The results from the recommendation system are optimized with respect to parameter consideration for recommendation which will result in increase in efficiency of the system. The efficiency of this proposed system is based on ID3 algorithm. The system also includes the random forest algorithm in order to predict the most suitable crop based on the user input.

As a advantage the proposed system gives ratings on the basis of crop cultivation. Similarly it helps to improve the marketing of crops The disadvantage of the system is, it focuses on large areas so that system is becoming more bulky and complex. Also the system is not that much user friendly.

### **4. Mobile Phones- Boon to the rural social system [4]**

In this paper here discussed about how mobile phones can be helpful for the agriculturists. Now a days mobile phones are available at very cheap price and every one can afford it so the system proposed in this paper is focusing on the agriculturists. Mobile phones can help farmers in making right decision at right time and also enable him in gathering analyzing and disseminating information about prices during the marketing and supply of the crop.it can also help in educating farmers. Mobile phones based agricultural information services like IFFCO Kisan Sanchar limited (IKSL) and Reuters Market Life (RML) are becoming popular in India and providing services through SMS and voice messages about agriculture related information. Various features

of mobile phone are introduced here which makes it versatile, are SMS, Voice messages, MMS, GPRS. Therefore an effort in this paper has been made to enumerate the uses of mobile phones in agriculture and opinion of farmers towards the use of mobile phones in agriculture. This paper gives the idea about various mobile technologies. It also provides the information about pillars of the mobile based services which are access devices, content infrastructure and technology. The main advantage of this system is it gives the way of using the technologies and educating the farmers with all these technologies so that they can use it for better marketing of their crops.

Disadvantage of this system can be all the farmers are not reaching the technologies and innovations efficiently. Many of the farmers are still unaware about it.

### **5. MahaFarm: An Android Based Solution for Renumerative Agriculture [5]**

This paper describes a mobile based application for farmers which would exhaustively help them in their farming activities. It proposed an android based mobile application- 'MahaFarm' which would include agro based crop information, weather updates, daily market prices and news/loan information updates. This application has been designed taking Maharashtra into consideration. The application aims to use RSS feeds for news updates. News could be regional or national. The application would also provide the farmers with the information about the various loan schemes offered by different major banks India. Eg. National Bank for Agriculture and Rural Development (NABARD), State Bank Of India and also regional/local banks. The application is supported by all versions of android Gingerbread and Jellybean differs in interface however but the functionality is independent of the version. This application for agriculture enables the farmer to calculate the profitability based on where the grain markets are currently trading and to see how higher or lower grain markets are presently.

If we highlight the advantages of this application then this application is one stop solution to all agricultural needs. It has highly authentic and reliable database on agriculture. It collects accurate information from reliable sources. Also application has easy to use graphical interface.

Main disadvantage of this application is it is in English language, but to make it accessible to large rural domestic market, the next version of this application

would be in the local languages. So it would it would help the farmers to use it effectively and would be beneficial to most of them.

### 6. A DTN- Based Sensor Data Gathering For Agricultural Applications [6]

This paper presents field experience in data collection from remote sensors. We have decided to implement idea of this paper in future. In this paper by letting tractors, farmers and sensors have short range radio communication devices with delay disruption tolerant networking (DTN), we can collect data from those sensors to our central database. It have achieved 99.8% success rate for data gathering with moderate latency, showing sufficient usefulness in data granularity. DTN, which stands for Delay (or disruption) Tolerant Network, was originally proposed for interplanetary communication it is now widely acknowledged as a framework that can be applied to village to village communications, vehicular communications, and sensor networks. Advantage of the proposed system is it gives accurate results.

### III. CONCLUSION

For advance farming there are many systems are developed and being developing. The study shows that it will definitely help farmers in crop cultivation process. By reviewing all the papers we decided to implement a system which takes advantage and overcome the disadvantages like language dependency, platform dependency and inadaptability.

### IV FUTURE CHALLENGES:-

In future we can extend this work as; the system can use the sensor network to monitor the crops and automatically generate appropriate response and further predictions for farming.

### V. ACKNOWLEDGEMENT

I feel immense pleasure while presenting this work and I am very thankful to my guide Prof. Shweta Joshi, Dept. of Computer Engineering of Flora institute of Technology, Pune for her valuable suggestions and support. I would like to express my sincere thanks to her and For teaching me the fine points which are helpful for this completing work. I am also thankful to our Principal of FIT, Pune Dr. A. S. Padalkar for his consent to go forward with this topic.

### VI. REFERENCES

- [1] Vikas Kumar, Vishal Dave, Rohan Nagrani, Sanjay Chaudhary, Minal Bhise. Crop Cultivation Information System on Mobile Devices, IEEE, 16(2):6071, 2013.
- [2] Shitala Prasad , Sateesh K. Peddoju and Debashis Ghosh, AgroMobile: A Cloud-Based Framework for Agriculturists on Mobile Platform, International Journal of Advanced Science and Technology Vol.59, (2013), pp.41-52ijast.2013.79.04.
- [3] Kiran Shinde, Jerrin Andrei, Amey Oke, Web Based Recommendation System for Farmers, International Journal on Recent and Innovation Trends in Computing and Communication Volume: 3 Issue: 3,.2015,pp.41-52ijast.2013.79.04.
- [4] Ravinder Kaur Dhaliwal, Vister Joshi Mobile Phones Boon to Rural Social System, Literacy Information and Computer Education Journal (LICEJ), Volume 1, Issue 4, December 2010.
- [5] Aniket Bhave, Rahul Joshi, Ryan Fernandes MahaFarm-An Android Based Solution for Remunerative Agriculture, International Journal of Research in Advent Technology, Vol.2, No.4, April 2014 E-ISSN: 2321-9637.
- [6] Hideya Ochiai, Member, IEEE, Hiroki Ishizuka, Yuya Kawakami, and Hiroshi Esaki, A DTN-Based Sensor Data Gathering for Agricultural IEEE SENSORS JOURNAL, VOL. 11, NO.11, NOVEMBER 2011.
- [8] Gerald Kotonya, Ian Sommerville and Steve Hall, Towards a Classification Model for Component-Based Software Engineering Research. 2003, IEEE, 29th EUROMICRO Con-ference New Waves in System Architecture.
- [9] Ye Wu, Dai Pan and Mei-Hwa Chen, Techniques for Testing Component-Based Smart Fertilizer [www.smart-fertilizer.com/articles](http://www.smart-fertilizer.com/articles).
- [10] Nagaraju Pappu, Runa Sarkar, and TV Prabhakar Agropedia: Humanization of agricultural knowledge Internet Computing, IEEE, 14(5):575