Modern Farming Techniques using Android Application

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A Modern Farming Techniques using Android Application

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ABSTRACT:Today mobile devices are used frequently by everyone, including the farmers and countryside people. According to observations of Information and Communication Technologies (ICT) mobile plays vital role in daily life of farmers. The farmers, who were dependent on clouds for rain, now are looking into the Cloud Computing (CC) for their solutions towards cultivation of superior crops in today's modern agricultural world. The traditional methods used by the farmers, peculiarly in India, are very slow and undependable. The large amount of crop is getting damage in the field due to the bacterial attacks and lack of information resources. Annually, such loss exceeds 40% in total. So, the paper presented here suggest various ways in which a farmer can utilize Mobile Computing(MC) on their handsets using application called "Kissan", to assist them for relatively better cultivation and merchandise. The main awareness of this work is focused on Indian farmers as it addresses the key problems of getting the market updates of different products, weather updates and information about the rain and also provides multiple language support. This will effectively help farmers to sell their product in global market and earn remarkable profit. Hence, this framework uses MC, which in effect, puts power into a farmer's hand. The experimental setup uses tools like Android SDK. In this research an Android based mobile devices are used for testing.

KEYWORDS:Information and Communication Technologies, Mobile Computing; Cloud Computing.

I. INTRODUCTION

The agriculture is basic reason of production of food and raw material, which eventually is reason of survival of the population. In Indian most of the population is dependent on agriculture. However, there is also need to review and revitalize the mechanism for updating the technology. In the upcoming years agriculture will see major changes. Unlike the earlier 'green revolution' which had a foundation of advanced pesticides and fertilizers, now the agriculture will be revolutionized with the help of technology. Every developing economy has agriculture sector as irreplaceable pillar and so does India. In India the agriculture sector contributes close to 20% of GDP. Either directly or indirectly, 60% of total population of India depends on agriculture. The vast majority of Indian farmers, which includes small-scale producers, are often unable to access the information and technological resources that could increase the yield and lead to better prices for their crops and products. The wide spread network of mobile phones could be the game changer in this problem. It will put agriculture field to its zenith.

The main purpose for such project is to develop a mobile phone based solution that helps in farm management, leads to agricultural yield improvement and helps in care/maintenance of the farms.

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Vol. 4, Issue 10, October 2015

II. SYSTEM FEATURES

A. System Architecture :

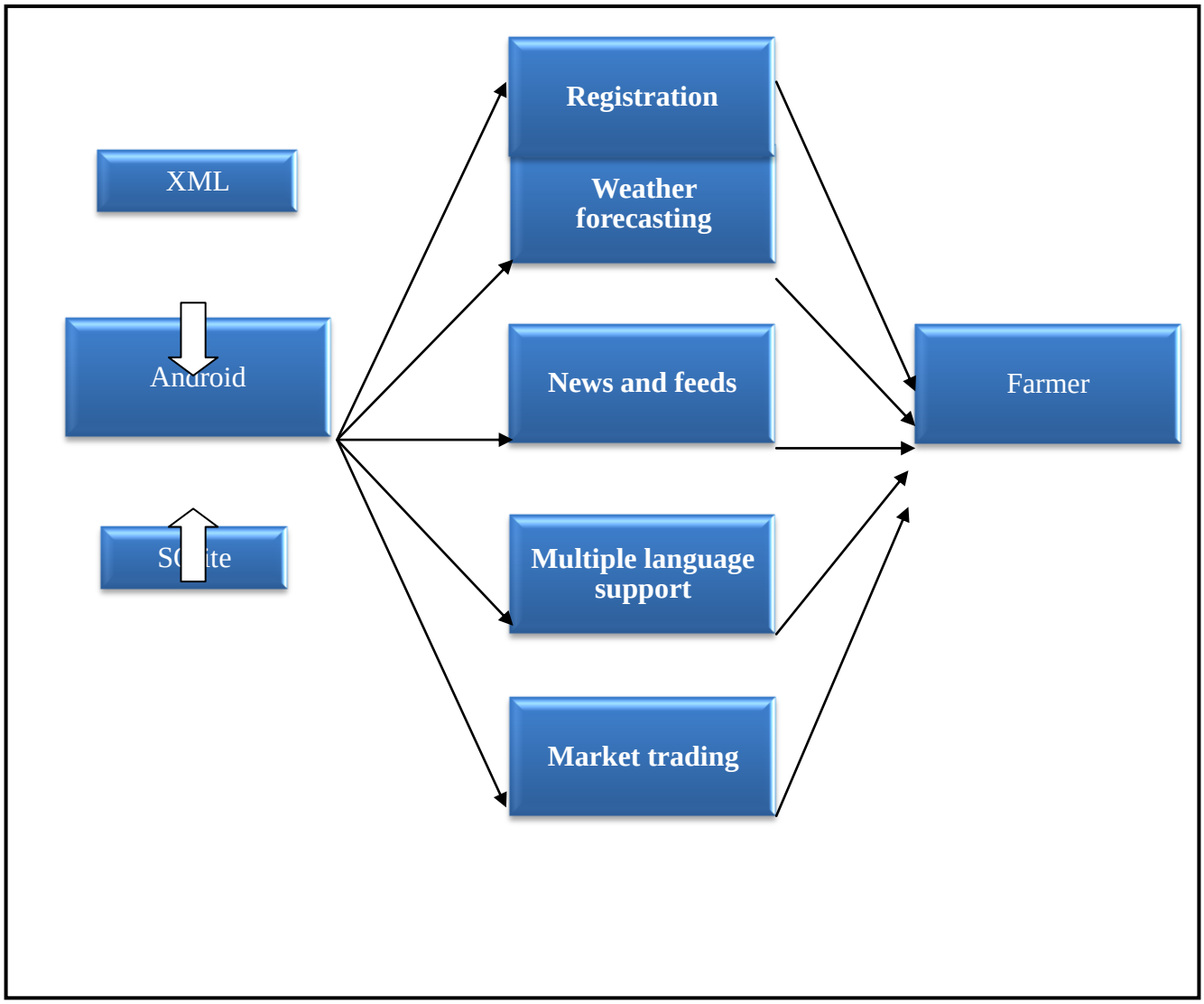

Fig 1: System Architecture

B. Operations :

- Registration: registration form will take information of farmer like farmers name, location of farmer by zip code for providing daily weather forecast report of that location, phone number of farmer to give the daily updates by text message.
- Weather forecasting: In weather forecasting report application will provide weather forecasting report of particular location ,and perfect location of farmer will be taken from zip code which is already registered on registration page

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Vol. 4, Issue 10, October 2015

- News and feeds: In news and feeds application will provide daily news updates of crop and other weather report. According to location of farmer daily news will be provided on mobile phone which is already registered on registration page and also on application.
- Multiple language support: In multiple languages support application will provide all information in various languages according to regions, like application will provide all information in Marathi, English, and Hindi etc. All the information will be already stored in different languages, just user has to press button of particular language and information will be displayed in particular language.
- Market trading: Application will provide daily updates and changes in prices of crops in market. This all information will provide on mobile phones and also on applications home page.

III. INNOVATION AND OVERCOMING PREVIOUS DRAWBACKS

Aim of modern farming technique using android app is to enhance transparency in the agriculture commodity marketplace by providing market price information, facilitating collective buying of inputs and collective selling of produce. Farmers rely on weather forecast to decide as what work to do today and tomorrow. So using this app which provides function of weather forecast where farmer can query for the temperature and humidity required for the particular crops.

• Advantages of Modern Methods over Traditional Methods of Agriculture

1. Traditional farming tolerated unpredicted environment where as, Modern farming provide predictable environment by weather forecasting.
2. Traditional farming needs great amount of labour and various activities to go through for conducting farming. On the other hand Modern farming does not need great amount of labour since the mobile and machines take care of everything.
3. Modern farming techniques using android application are done a lot quickly which brings in more profit for farmers.

IV. METHODOLOGIES

- Weather Forecast Report :

Weather forecasting is deal with science and technology to predict the state of the atmosphere for given time and for a given location. Human beings have attempted to predict the weather informally using their experiences. Weather forecasts are made by collecting quantitative data about the current state of the atmosphere at a given place and using scientific understanding of atmospheric processes to project how the atmosphere will change, after 24hr or a week.This weather report will help the farmers to take necessary decision for their crops.

- Information about Crops :

Agriculture is all about cultivation of Crops, Animals etc. Agricultural study says that growth of production will be dependent on climate, soil and medicines and fertilizers. And proper information help to grow production of food we are providing all detailed information about crop, fertilizers and animals etc.

- News and feeds :

Government of India will launch different Programs which are beneficial to Farmers but drawback of poor performance of this program are they are not able to reach every person and not able to give proper information so here we provide detailed information and Process of different programs.

- Farming Tools and Technology :

Industry of Farming tools and technology will grow in rapid order. Different tools which help the farmers for growing there production but lack of communication between new technology and farmers, they will not get proper guideline hence we provide detailed information and alerts about new upcoming technology.

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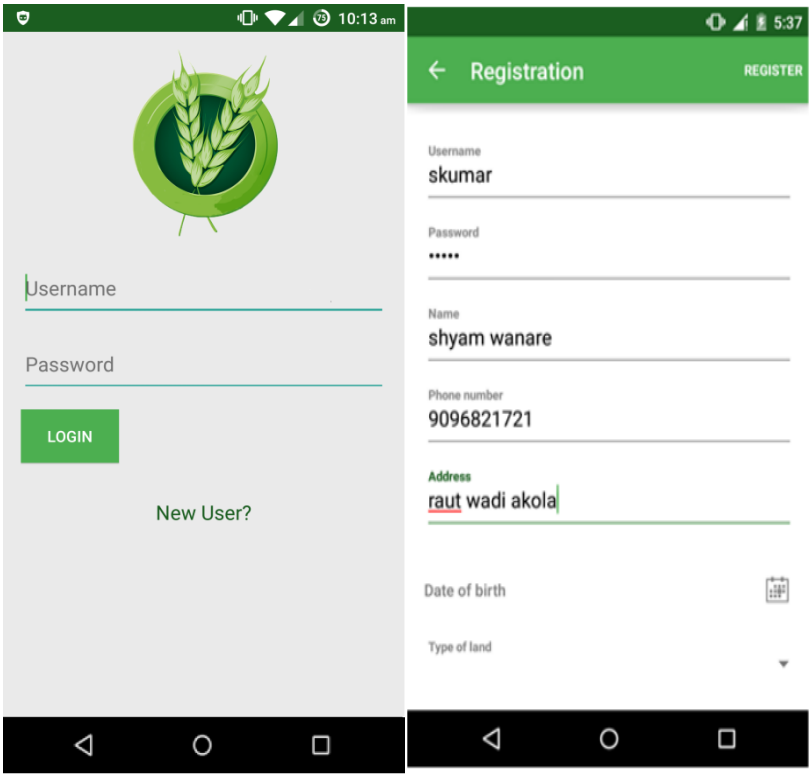
V. SIMULATION & RESULTS

Traditional farming tolerated unpredicted environment where as, Modern farming provide predictable environment by weather forecasting. Traditional farming needs great amount of labour and various activities to go through for conducting farming. On the other hand Modern farming does not need great amount of labour since the mobile and machines take care of everything. This application gives real time weather, news and market prices at different locations related to farming that also in regional languages. So, all the results of our application will help farmer to enhance their farming to yield more profit.

- **Login form & Registration :**



(a) (b)

Fig. 2.Application start-up (a) Login page (b) Registration page.

At the start-up of application there is starting page where there is login for existing users. At the start of application, framers need to register first to give their detail information so they can get information according to their region.

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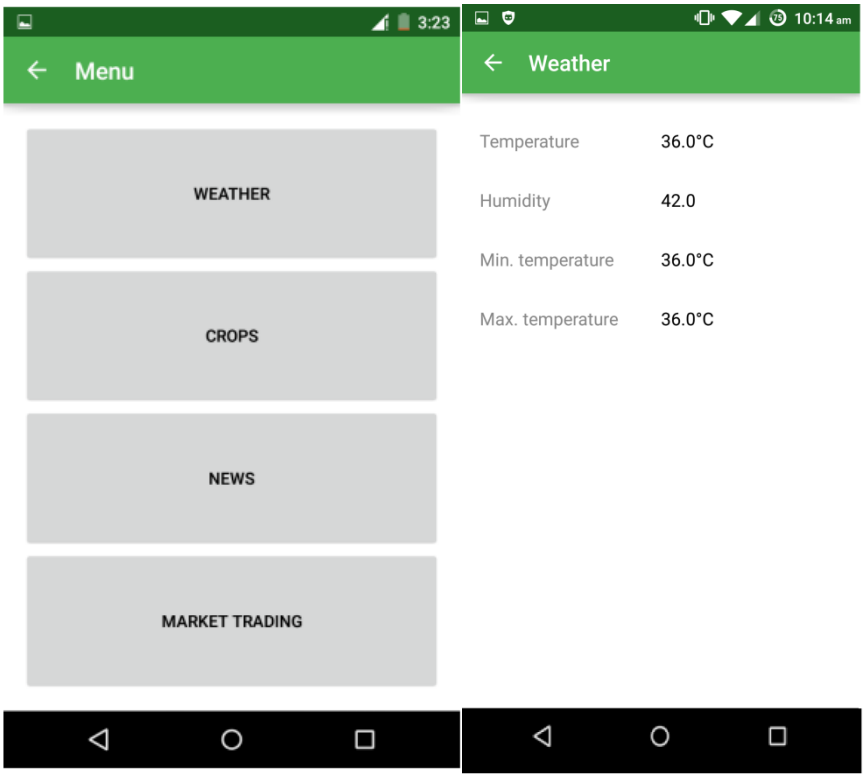
Vol. 4, Issue 10, October 2015

- **Menu screen :**



(a) (b)

Fig. 3.Menu on application Homepage

This screen displays four different menu options which are:

1. Weather
2. Crop
3. News
4. Market Trading

- **Weather Screen :**

Weather forecasting provides user real time weather information this will help farmers to take necessary decision for their crops.

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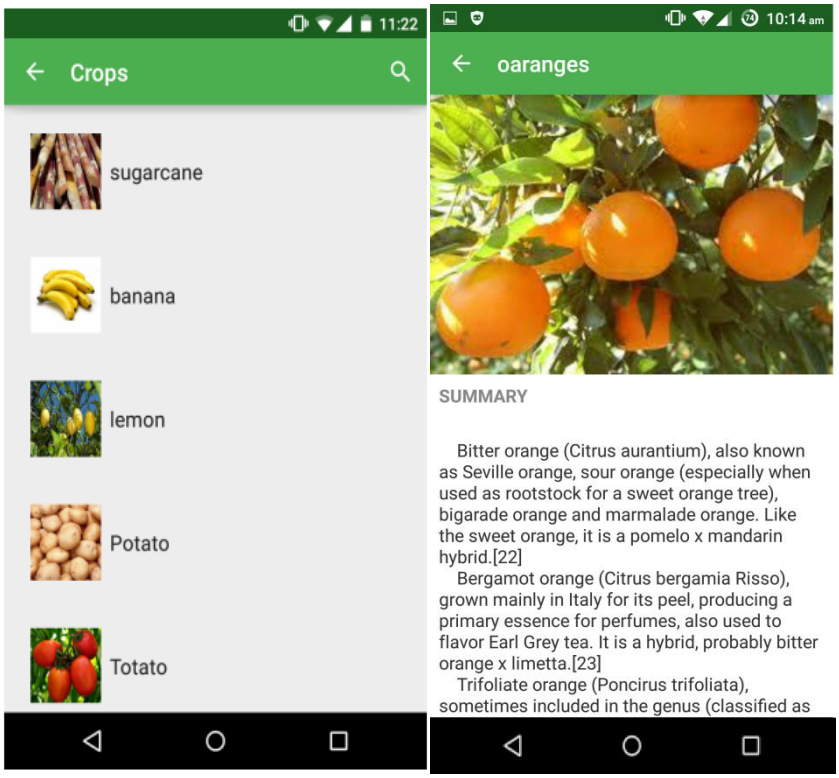
Vol. 4, Issue 10, October 2015

- **Crop Screen :**



(a) **(b)**

Fig. 4.Crops option (a) Crops list (b) Details of a crop

This crop screen provides users detail information about different types of crops.Proper information helps to increase production of crops, food products, fertilizers and etc.

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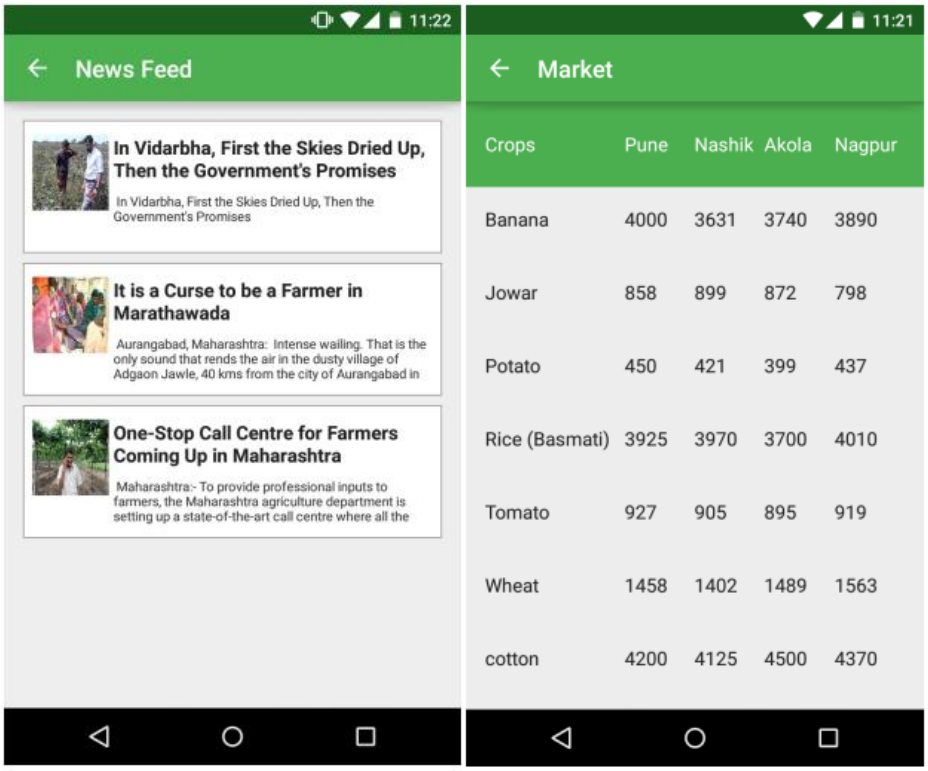
- **News and Market screen :**



(a) (b)

Fig. 5.Other options (a) News screen (b) Market screen

This screen provides user detail information and process of different programs. The programs that are beneficial to farmers but drawback of poor performance of these programs are, they are not able to reach every person and not able to give proper information. That's why here we provide detailed information and Process of different programs.

Market trading helps user to take essential decisions to sell their crops in market.This helps farmers to make grate profit and get most of benefit from it.

VI. APPLICATIONS

This application would be boon to the Indian farmers as it addresses the key problems of getting the market updates of different products, weather updates and information about the rains and also provide multiple language support. The farmers will derive greater benefit when they can make better decisions about where to sell their output after getting market prices for variety of local and distant markets.

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VII. CONCLUSION

Finally, with the analysis of current farmers knowledge about modern farming techniques and actual development of modern techniques this application will more helpful them to get all kind of information only in one touch on any time at any place.

REFERENCES

[1] Google. http://developer.android.com, (last accessed 15-Dec-2013)
[2] Raspberry Pi ®. http://www.raspberrypi.org/, (last accessed 15-Dec-2013).
[3] SocioEconomicImpactofMobilePhonesonIndianAgriculturehttp://www.mobileactive.org/files/file_uploads/impact%20of%20phones%20on20Indian%20Agriculture.pdf
[4] ICT in Indian Agriculture
[5] Benefits from Rural ICT Application in India: Reducing Transaction Costsin the Presence of Wheel Slips. In: Proc. of the IEEE/ASME International Conference on Advanced Intelligent Mechatronics. IEEE. July 2013, pp. 1534-1539.
[6] Times of India.