

Mobile Applications in Agriculture: An Overview

Parashuram Kambale¹, Vikas Chowhan², Rakesh Bhattad³ and
S. Ragunath⁴

Abstract

Mobile or Smartphone applications, called Apps are gaining importance in agriculture. Farmer can get all solutions and information in just one touch through the Apps. The information is stored in mobile handset for easy access, for example, the details of the package of practices, pest and disease information, and scheme-related information. The majority of Indian farmers are small-scale producers. They are often unable to access the information and technological resources that could increase the yield and get better prices for their crops and products. The widespread network of mobile phones came to the rescue to tackle this problem. Most Apps are helpful only for specific information, while others are multi-informant. This paper reviews the available mobile Apps in agriculture in India meant for farmers and other stakeholders.

Keywords: Agriculture, Mobile Apps

Introduction

We can find that different elements affect agriculture development; however, the essential bottlenecks are the lack of instant information and drudgery involved in farming practices. Access to appropriate information and knowledge for successful agricultural production is essential. Farmers must be aware of the weather forecast for agriculture input applications like fertilizer and pesticides, which might be affected by unforeseen weather disasters. For overcoming these issues, agriculture should be made more alluring and done smartly. There are talks on climate-smart agriculture,

^{1,2,3&4} Ph.D. Scholar, Dept. of Agril. Extension Education, UAS, Raichur
Corresponding Author E-mail: parsu1ka1@gmail.com

aiming for a sustainable increase in agricultural productivity and incomes to meet the current and future demands. Various agricultural mobile applications can be used in farming and allied activities as indicated by their source and usage. Its utilization is vital for rapid growth and easy access to Indian agriculturists, farmers, and growers. Information about policies, good agricultural practices, market prices of commodities, current demand of commodities, and various helpful agriculture schemes are helpful to the farmer for reaping good profits. Thus, farmers need to have all such information on their doorsteps. The main advantages of mobile Apps for farmers are easy to access information on farmer's mobile. The information is stored in the mobile handset for easy access, for example, the details of the package of practices, pest and disease information, scheme-related information. Wherever the information is dynamic, for example, weather details, market prices, advisory services, the mobile App requires internet connectivity to fetch the data from the back-end server databases.

Sources of Information

During the past decades, agriculture information and technology transfers have been done mainly by village-level workers, extension personnel, scientists, subject matter specialists of KVKs, Universities, and others.

Later, with the internet's arrival, most of the information was tried to avail by web-based approach (e-based services). However, it has reached only limited users due to the installation cost of the computer devices, for example, e-choupal kiosks. SMSs and voice message delivery systems are easy, but it requires particular types of options or formats to be sent to the system to get the precise information; therefore, ICTs are moving to mobile Apps.

Importance of Mobile Applications in Agriculture

All information is available in the public domain, and it is difficult for the farmer to access it. Mobile or Smartphone applications are called apps, which could avail all such information with changing seasons and climate. Farmer can get all solutions and information in just one touch. According to the statistics, there are two billion smartphone users across the globe in

2016. The majority of the Indian farmers are small-scale producers. They 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 widespread network of mobile phones came to the rescue to tackle this problem. Most Apps are helpful only for specific information, while others are multi-informant. Some are just calculative types and for academic usage. Therefore, India's increasing penetration of mobile networks presents an opportunity to make useful information more widely available.

The Ministry of Agriculture, Govt. of India, started various schemes in the interests of the farmers for mobile phones. The emergence of new wireless and satellite-based solutions is positioning the developing countries to take advantage of the benefits derived from ICT applications. Mobile or smartphones are becoming an essential device for all types of users, irrespective of the age group. Information and Communication Technologies (ICTs) in enabling access to and exchange information for farmers is evident. Among ICTs, use of mobile phones, have been changing the agricultural communication process. The introduction of mobile phones has resulted in new services and applications. These include access to market information, weather information, monitoring plant health, education, and other services in the agriculture sector.

Through mobile Apps, farmers are getting agricultural and allied information on time. Many Apps are being utilized for different kinds of functionality regarding the farming activities like cropping information, pesticides, fertilizer, seed, selling of crop, irrigation information, estimation of crop production, weather information, information regarding the best practices of farming, new technologies, dealers and market price. All types of information on crops, soil, weather, climate, rainfall, seeds, animals, and machinery at any point in time and at any number of times are available at the fingertips of farmers (World Bank 2012). The information available is localized, thereby increasing the comfort and precision required. This information is updated regularly and delivered via various applications so that the farmers need not worry about getting the information from different sources.

In the present review paper, we discussed the different apps used for agriculture and agriculture-related activities, which can help agriculture develop faster and hustle-free. Based on the ratings and downloads of the App on the play store following applications were discussed in brief. Ratings will help know the preferences of the farmers /Users. While the downloads of Apps will help know the reach of the App.

1. IFFCO Kisan: The App was developed by Indian Farmers Fertilizer Cooperative Ltd. It has 3.3 ratings and 5L+ downloads. It helps access various modules, including agricultural advisory in text, images, audio, and videos in the selected language. It also connects with Kisan Call Center Services.

2. Crop Insurance: The Ministry of Agriculture and Farmers Welfare, Govt. of India developed this App. It has 3.4 ratings, with 5L+ downloads. It can be used to calculate the Insurance Premium for notified crops based on area, coverage amount, and loan amount in the case of the loanee farmer.

3. Meghdoot: The Ministries of Earth Sciences developed the App and Agriculture, India, with a 3.5 rating and over 1lakh downloads. It will provide weather forecasts relating to temperature, rainfall, humidity, wind speed, and wind direction, which play critical roles in agricultural operations and advisories to the farmers on how to take care of their crops and livestock.

4. e-NAM Mobile App: The Ministry of Agriculture & Farmers Welfare, Govt. of India developed this App. It has a 3.6 rating with 1 lakh downloads. It is to facilitate remote bidding by traders and access to arrivals and price-related information to farmers and other stakeholders on their smartphones

5. Pashu Poshan: National Dairy Development Board (NDDB) developed this App having a 3.6 rating with over 50 thousand downloads. With the help of this balanced App, a ratio can be formulated while optimizing the cost by considering animal profile, i.e., cattle or buffalo, age, milk production, milk fat, feeding regime.

6. Kisan Suvidha: The Ministry of Agriculture and Farmers Welfare, Govt. of India developed the App with a 3.9 rating and 10 thousand plus downloads. It helps farmers by providing relevant information on weather, market prices, dealers, plant protection, IPM practices, seeds, expert advisory, godowns, and cold storage.

7. BharatAgri: It is a Smart farming and agriculture App for farmers. Provides information on innovative satellite mapping, weather forecasting, soil testing, and water testing to enhance farmers' overall income. It has a 4.1 rating with more than ten lakh downloads.

8. Plantix: The App was developed by PEAT, Germany having a 4.3 rating and over one crore downloads. The App will be used for plant disease diagnostics and monitoring. The App provides information concerning best practices, preventive measures, and independent options for action.

9. A Fisher Friend Mobile Application (FFMA): M. S. Swaminathan Research Foundation in partnership with Qualcomm under its wireless reach program developed this App. It has a 4.4 rating with more than 10 thousand downloads. It is a single-window solution to provide easy access to all relevant information related to fishing.

10. Cattle Expert System: TNAU, Coimbatore, and C-DAC, Hyderabad have developed this App with a 4.6 rating and more than 10 thousand downloads. This App covers feeding management for cattle and buffalo, breeding management, diseases, and their control management, production technology, calf management, general care for cattle and buffalo.

Conclusion

Mobile applications in agriculture and allied sectors are more likely to see further integration and dependence. The use of information technology tools that are easily accessible, farmer-friendly, and generally inexpensive in agriculture has dramatically altered the production-consumption interface. With the help of these Apps, farmers can make informed decisions well in advance, which has helped amplify production and made agriculture risk-free to a more significant extent.

References

- Bhaskar, G., Murthy, L., and Sharma, V.P. (2017). Mobile Apps Empowering Farmers. Extension Digest. MANAGE.01 (02): 01-35.
- Kumar, M., & Agrawal, L. (2020). Empowering Farming Community Through Mobile Applications: Changing Scenarios. International Journal of Scientific & Technology Research, 9(03), 4.
- Saravanan, R., (2014) (Ed.). Mobile Phones for Agricultural Extension: Worldwide mAgri Innovations and Promise for Future, New India Publishing Agency, New Delhi.
- Sarkar,S., Kumar,B., and Kumar,S. (2021). Mobile Applications for Indian Agriculture and Allied Sector: An Extended Arm for Farmers. Int.J.Curr.Microbiol.App.Sci. 10(03): 1913-1920.