

Role of Mobile Phone in Agriculture and Allied Activities of Rural Household

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Abstract

In India most of the farmers are small and marginal. It is impossible for the extension personnel to provide information each and every farmer individually. For all person mobile is an essential device for communication, entertainment, etc. As the use of mobile is increasing day by day, so the farmers can easily avail the information by sitting in their homes through this device. In India, there are many mobile applications developed to utilize mobile phones in agriculture by private sector (Indian Farmers Fertilizer Cooperative Limited, Nokia, Airtel, Tata Consultancy Services, etc.) and public sector (Ministry of Agriculture and Farmers' Welfare, Agricultural Universities, research institutions, State Governments, Indian Meteorological Department and others) in agricultural advisory service for agronomic practices, weather forecasts and market price. Due to the high dependency in agriculture, the role of mobile-based agro advisory is very important for agriculture. In this regard the present study focuses on the role of mobile in agriculture and allied activities.

Keywords: Farmers, communication, entertainment, agriculture

In our country, major portion of rural population depend on agriculture for their livelihood. There are fewer numbers of extension workers as compared to the farming community. So it is impossible to solve every farmer's problem. For this reason, mobile technology is fast growing medium to provide information to the farmers. Mobile technology helps in disseminating the information like cultivation practices, seed availability, cropping pattern, weather forecasts, fertilizer usage, market information, organic practices and information about vaccination, insurance alerts, livestock diseases, exotic and indigenous breeds, feeding management, livestock rearing and government schemes on agriculture and allied sector to the farmers. Alhassan and Kwakwa

(2012) in his study on use of mobile by small scale farmers in Northern Ghana reported two benefits and these were improved communication with farm input sellers and efficient use of time and help farmers to contact anyone or anybody within their line of business or social circle. Aker and Mbiti (2010) reported that mobile phones as a new search technology that had reduced the information search cost for farmers by almost 50 per cent in Niger. One of the advantages of mobile telephony was that instead of being passive recipients of information through television, radio or newspapers, users have the benefit of interaction and access to multiple sources of information. This also helped them to assess the quality of the information received.

Farmers could reduce spoilage by harvesting when prices in the market were better. Small traders could fine-tune their supplies according to customers' needs, conveyed over mobile phones. Small farmers, who earlier sold to intermediary traders in the village, could not find out details of prices in wholesale markets and take their produce to these markets. The mobile phones have developed to establish a strong linkage with labour-absorbing (Punjab, Haryana, Delhi and other areas) and labour-supplying regions (Bihar, Uttar Pradesh).

The role of mobile phones helped in reducing information search costs and asymmetries and increasing market efficiencies. The use of mobile phones had been found to encourage poor farmers towards greater market participation and diversification to high-value crops. This change had helped increase farm earnings through higher price realization and reduction in wastages (Mittal and Meher, 2012).

Ansari and Pandey (2013) revealed that 83.34 per cent farmers owned a mobile for more than 2 years and 72.33 percent received information related to agriculture from 'fellow farmers'. All the respondents interviewed said that they would like to subscribe if Pantnagar University starts mobile-based advisory service, although only 45 per cent said that they would be willing to pay a nominal of fee ₹ 100 per month. As regards the type of services expected through such a mobile service, farmers expressed interest for disease identification and control measures (27.70%), fertilizer application dose, method and time (27.77%), harvesting time (25.00%), marketing (22.23%) and sowing time (19.45%).

There are now higher connections between buyers and sellers, whether in product or factor (labour) markets. The mobile phone enabled both direct connections and larger numbers of intermediaries and could reduce the margin that intermediaries used to get. The mobile phone is particularly important in sustaining familial relations in multi-locational households with at least one migrant.

Studies reveal that mobile phones have a positive impact on sustainable poverty reduction and identify accessibility as the main challenge in harnessing the full potential (Bhavnani *et al.* 2008).

According to 'The Rising Connected Consumer in Rural India', a study by the Boston Consulting

Group, up to 300 million Indian consumers are expected to be online by 2020. More than half of the new Internet users are expected to come from rural communities. Cheaper mobile handsets, spread of wireless data networks, and evolving consumer preferences will all drive rural penetration and usage. (BCG, 2016). Roy Burman (2008) stated that Information and Communication Technologies (ICTs) could play a significant role in making information available to the farming community at a reasonable cost.

The advantages of mobile phones include affordability, wide ownership, voice communication, and instant and convenient service delivery. Due to these, there is explosion across the world in the number of mobile apps, facilitated by the evolution of mobile networks and by the increasing functions and falling prices of mobile handsets (World Bank, 2012). Though being allowed to keep or use a mobile phone has become a matter of struggle for young women in some rural areas. Many village councils have banned unmarried women from having or using phones. Equal access of mobile should be ensured through social mobilization for sustainable development.

Role of mobile phones in Agriculture

1. Mobiles can help in providing the interaction among the researchers, extension workers and farmers.
2. Provision of mobile services to the block and district level development officials leads to efficiency in delivering the services for overall agriculture development.
3. Mobiles help in providing up to date information services to the farmers such as on package of practices, market information, weather forecasting, the input supply, credit availability, etc; can be provided at the earliest possible time.
4. Mobiles provide information services on disease/pest early warning systems, information regarding Research Development programmes and crop insurances, post-harvest technology.
5. Mobiles can extend services regarding farm business and management information to the farmers.

- 6. Mobiles can be effectively used in providing tele-education to the farmers.

- (e) Lack of mobile friendly and locally relevant digital content in local languages
- (f) Inadequate response from the service provider
- (g) Lack of availability of timely and accurate information

Benefits in the Agriculture and allied Production by use of Mobile Phone

- (a) Reduction in production cost of crop cultivation
- (b) Higher productivity or yield
- (c) Saving of time due to timely procurement of inputs
- (d) Improved farming practices
- (e) Mobile phones have provided new approach to farmers to make tentative decisions much more easily than before
- (f) Helps in build up marketing linkage
- (g) Mobile phone has made it possible for migrants and their families to remain in regular touch
- (h) Leads to greater social cohesion and improved social relationships among farmers and business community

Constraints in Accessing Mobile Phone

- (a) High cost of smart handset
- (b) Difficulty in mobile phone operation, mainly for the illiterate farmers and also in case of new android phone
- (c) Difficulty in power (Electric) charging, disturbance of electric power in the rural area is common problems

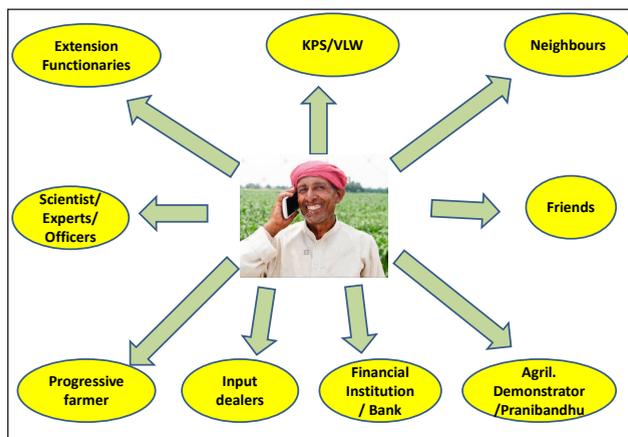


Fig. 1: Contact of farmer with different actors of agriculture & allied sectors

- (d) Weak strength of network or call drops in the rural area

Mobile Apps Developed for Agricultural Development

There are number of smart mobile application developed for providing agriculture and allied sector information. A mobile application is software on a mobile phone handset or tablet computer that helps a user to access specific information, marketing of the products, transfer of money, etc. The application (app) is downloaded (for free or for payment) from an online store and may require a live connection to function effectively.

These mobile applications are also helpful for farmers to easily access the information about package of practices, pest and disease information and scheme related information etc. Wherever the information is dynamic in nature, for example weather details, market prices, advisory services, the mobile app requires Internet connectivity to fetch the data from the back-end server databases. The mobile services, particularly the SMS service is only a one-way information provider to the farming community. The farmer needs two-way-communication and dynamic information for day-to-day farming.

Farmers get timely and accurate information about the latest technologies, market information and also get contact with the experts for any query about agriculture.

The government of India and private sector organizations developed number of mobile applications for the benefit of farmers. These apps available free of cost from the Google play store and website (e.g. mkisan web site). Farmers can easily download it and use for agriculture purpose (Anonymous, 2016, 2017).

Some of the mobile applications are discussed here:

IFFCO Kisan

Indian Farmers Fertiliser Cooperative Limited (IFFCO), together with telecom giant Bharti Airtel

and Star Global Resources Ltd. has promoted IFFCO Kisan Sanchar Limited as a joint venture. Airtel is extending its network support to IFFCO Kisan Sanchar Limited and also provide a sustainable income generating business opportunity to Cooperative Societies. In this model, the telecom products of Airtel are made available to farmers and people living in villages through cooperative societies. The same SIM Card, which is used for communication, is turned into a powerhouse of knowledge for empowering people living in villages through relevant and pertinent information which is being provided by IFFCO Kisan Sanchar Limited through Value Added Service (VAS).

Kisan Suvidha

Kisan Suvidha is an omnibus mobile app developed by the Department of Agriculture & Cooperation, Ministry of Agriculture and Farmers Welfare to help farmers by providing relevant information to them quickly. The app is available in multiple Indian languages. The app provides information to farmers on weather, market prices, dealers, plant protection, IPM practices, seeds, expert advisory, Soil Health Card, godowns and cold storage.

eNAM Mobile App

National Agriculture Market (NAM) is a pan-India electronic trading portal promoted by the Government of India which networks the existing mandis to create a unified national market for agricultural commodities. The purpose of the Mobile App is to facilitate remote bidding by traders and access to arrivals and price related information to farmers and other stakeholders on their smartphones.

Agri Market

Agri Market mobile app can be used to get the market price of crops in the markets within 50 km of the device's location. This app automatically captures the location of a person using mobile GPS and fetches the market price of crops in those markets which fall within the range of 50 km.

Pashu Poshan

With the help of this app, balanced ration can be formulated while optimizing the cost considering

animal profile, i.e. cattle or buffalo, age, milk production, milk fat, and feeding regime *etc.* and milk producers are advised to adjust the quantity of locally available feed ingredients offered to their animals along with mineral mixture. Through this app a dairy farmer can know the correct quantity and mix of the feed and fodder to be fed to the milch animals.

Digital Mandi India

This App helps in checking the latest Mandi prices of agricultural commodities reported from different states and districts/mandis in India. One can get commodity wise categorization or state wise categorization.

Pusa Krishi

This App provides information related to new varieties of crops developed by the Indian Agricultural Research Institute, resource conserving cultivation practices, farm machinery and its implementation and production technologies, to the farmers. A feedback section enables farmers to have a real time conversation with the stakeholders.

CONCLUSION AND RECOMMENDATIONS

It can be concluded that the role of mobile is vital in developing the agriculture activities of rural households. The farming communities can get more benefit by using mobile technology properly. As the farmers use mobile, but very less number of farmers use the agricultural application. For that government should take necessary steps to aware and sensitize the farmers how to use mobile. More training and awareness programs should be organized in collaboration with government and private organizations.

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