

## **Assessment of Utility of Mobile Based Agro-advisory Services in NCR-Delhi**

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### **ABSTRACT**

The study on assessment of mobile based agro-advisory services was conducted in four selected villages i.e. Kutbi (Muzaffarnagar, Uttar Pradesh), Khajurka (Palwal, Haryana) Rajpur (Aligarh, Uttar Pradesh) and Beenjpur (Alwar, Rajasthan) during 2017. The weather based agro-advisory messages were provided to the selected farmers. Thirty (30) registered farmers from each village were selected who were sent regular mobile advisory messages from IARI. Hence, a total of 120 respondents from the selected four villages constituted the sample of the study. The result revealed that more than 90 per cent of the respondent opined that they read the agro-advisory messages received from IARI, language of the messages were easily understandable, clear and readable and messages received were included local and familiar words for easy understanding. Also 80 per cent of the respondents expressed that information received through messages were adaptable in local field conditions and a majority (88 %) of the respondents expressed that the length of content of messages were adequate. The study has revealed that the information gathered through agro-advisory service has been found very useful and helpful to the farmers and they have started gaining interest in accessing information and decision making on the crop management by utilizing agro advisory services.

**Keywords:** Mobile based agro-advisory, Opinion, Need, Preferences

### **INTRODUCTION**

India's agricultural extension system is the largest in the world. It has been the most important section working under agricultural production system. It caters to the technology needs of about 100 million farm families. Its normal task of transferring and disseminating appropriate technologies and agronomic practices would not be sufficient for the empowerment of farming community (Kumbhare *et al.*, 2015). Extension agencies, services and workers will need to exercise a more proactive and participatory role for dissemination of agricultural technology to the farming community. Information and communication technologies (ICT) have been at the heart of economic changes for more than a decade. ICT sector plays an important role, notably by contributing to rapid

technological progress and productivity growth (Ysmail, 2008). Information Technology revolution is unfolding, and has very high visibility. It plays a crucial role for the benefit of the farming community. There are numbers of initiatives taken by the government and non-government organization for the empowerment of the farming community. Among modern ICT modes, mobile phone has been the most recent and widely accepted mode of delivering information (Mittal, 2012).

In the last few decades, information and communication technologies (ICTs) have provided immense opportunities for the social and economic development of rural people. The internet and mobile networks have the potential to provide agro-information services that are (i) affordable, (ii) relevant (timely and

customized), (iii) searchable and (iv) up-to-date (Ramamritham *et al.*, 2004). Telecommunications, as a means of sharing information, is not simply a connection between people, but a link in the chain of the development process itself (Hudson, 1995). Mobile telephony is one such technology that has developed significantly in the past few years, and the subscription rate in developing countries has gone up from 22 per 100 inhabitants in 2005 to 91.8 per 100 inhabitants in 2015 (Saravanan *et al.*, 2015). Mobile technology goes beyond geographic, socioeconomic, and cultural barriers. This large increase in mobile subscriptions, along with the recent roll out of 3G and 4G technology, can play a big role in agriculture and rural development. Mobile phones are devices that can create, store, access, and share information anytime and anywhere. Nevertheless, they are more than that. When teamed with extension and advisory services, they can help improve the livelihoods of rural people by getting much needed timely information to their fingertips at potentially low cost. According to Telecom Regulatory Authority of India (2017) the number of telephone subscribers in India increased from 1,153.51 million at the end of May, 2018 to 1,168.89 million at the end of June, 2018, thereby showing a monthly growth rate of 1.33 per cent. The overall Tele-density in India increased from 88.62 at the end of May, 2018 to 89.72 at the end of June, 2018. Global attention is being directed at agriculture due to emerging challenges of food security in recent years, resulting partly from age long negligence of dissemination of appropriate technology. Smallholder farmers which dominate the landscape of developing world need to improve farming by acquiring adequate knowledge and information (UN, 2005).

To utilize mobile phones advisory services, many initiatives have been taken by private sector (Indian Farmers Fertilizer Cooperative Limited, Nokia, Airtel, mKrishi of Tata Consultancy Services, Reuters Market Limited, aAQUA etc.) and public sector (Ministry of Agriculture & Farmers Welfare, State Agricultural Universities, Indian Council of Agricultural Research, State Governments, Indian Meteorological Department and others) in agricultural advisory service for agronomic practices, weather forecasts and market price. Reuters Market Light (RML) offers Indian farmers up-to-date,

local and customized commodity pricing information, news and weather updates (Mehra, 2007). The Fisher Friend project of the M.S. Swaminathan Research Foundation (MSSRF) in Tamil Nadu and Puducherry leverages mobile technology to provide vital livelihood information to fisher folk. aAQUA was designed and developed at the Developmental Informatics Lab at IIT Bombay, offers real-time decision-support tools (aAQUA) to progressive farmers and organizations supporting progressive farming (Bahuman and Kirthi, 2007). Due to increased dependency, the mobile phone is becoming a common communication platform of the world, especially in the field of agriculture for the benefit of farming community. Keeping in pace with the current digitization initiatives, Division of Agricultural Physics, IARI has initiated location specific weather based agro-meteorological mobile advisory services on real time basis in 2013 to farmers of National Capital Region (NCR) of Delhi for agricultural operations using medium range weather forecast. Hence, the present study was carried out to see the utility of mobile based agro-advisory services in the four selected villages of NCR.

## METHODOLOGY

The study was conducted in four selected villages i.e. Kutbi (Muzaffarnagar, Uttar Pradesh), Khajurka (Palwal, Haryana) Rajpur (Aligarh, Uttar Pradesh) and Binjpur (Alwar, Rajasthan) during 2017-18. The weather based agro-advisory messages were provided by the Division of Agricultural Physics to the selected farmers from 2015 to 2017. Thirty (30) farmers from each village were selected who were sent regular mobile advisory services from IARI. Hence, a total of 120 respondents from the selected four villages constituted the sample of the study. The data were collected from 120 respondents to see the farmer's feedback on weather based agro-advisory services sent through Short Message Texts (SMSs). The collected data were analyzed with the help of suitable statistical tools.

## RESULTS AND DISCUSSION

The data were collected from the respondents to see the farmer's feedback on weather based agro-advisory services sent through Short Message Texts (SMSs). It

can be revealed from the data in Figure 1 that only 15 per cent of farmers were illiterate, 30 per cent were educated up to primary level and 25 per cent each were higher secondary and graduate. The data related to regularity of receiving messages on agro-advisory services (Figure 2) revealed that 84.16 per cent respondents expressed that they received mobile agro-advisory services, however 15.84 per cent respondents reported that they didn't received the messages from IARI. Hence, out of 120 respondents 101 respondents received the weather based agro-advisory services regularly. The 19 respondents didn't receive the messages because of change in new mobile numbers by the respondents during the period.

Farmers' feedback on IARI agro-advisory mobile services were collected from village Kutbi (Muzaffarnagar), Khajurka (Palwal), Rajpur (Aligarh) and Beenjpur (Alwar). The data collected from 100 farmers regarding farmers' feedback on agro-advisory services (Table 1) revealed that the mobile based agro-advisory messages provided by the IARI were in *hindi* language for the benefit of the farming community. A majority (92%) respondent opined that they read the agro-advisory messages received from IARI besides 8 per cent respondent opined that they didn't read the agro-advisory messages received from IARI. Karn and Ghosh

(2018) also found that newspaper and mobile phone are the two mass media channels of information preferred by the farmers. Also 90 per cent of the respondents expressed that the language of the messages was easily understandable, clear and readable however, 10 per cent respondents opined that messages they received were not clear and readable. A majority (91 %) of the respondent expressed that the messages they received were included local and familiar words and 9 per cent expressed that there were no local and familiar words of the messages. More than 85 per cent of the respondents expressed that mobile based advisory messages were received timely and local needs and preferences of the farmers were considered by the scientists while framing the messages. Also 80 per cent of the respondents expressed that information received through messages were adaptable in local field conditions.

The data related to frequency of receiving messages on agro-advisory services (Figure 3) revealed that 67 per cent respondents expressed that they received mobile agro-advisory services fortnightly followed by monthly (28%) and weekly (5%). These findings were in line with Singh *et al.* (2015).

The length of content of messages on agro-advisory services (Figure 4) found that a majority (88%) of the

**Table 1: Farmers Feedback on Mobile Based Agro-advisory Services (N=100)**

Farmers Feedback on Agro-advisory	% Respondents	
	Yes	No
Do you read the agro-advisory messages from IARI, Pusa?	92.00	08.00
Do you feel the language of these messages as easily understandable, clear and readable?	90.00	10.00
Is there use of local & familiar words and terms in the messages?	91.00	09.00
Do you feel advises are timely?	86.00	14.00
Are the local needs & preferences considered while framing the messages?	88.00	12.00
Is the information adaptable in field conditions?	80.00	20.00

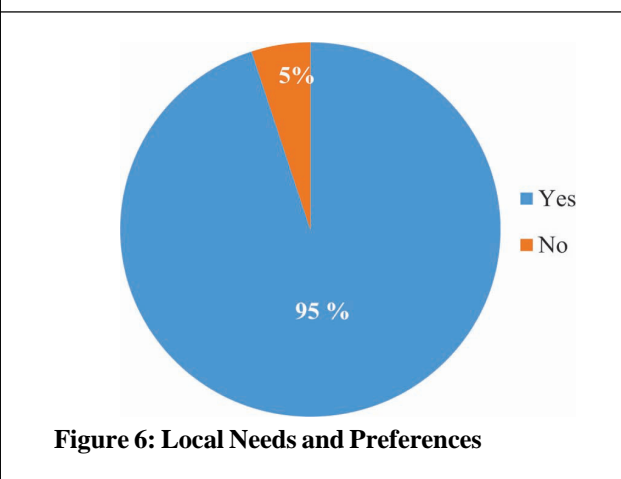
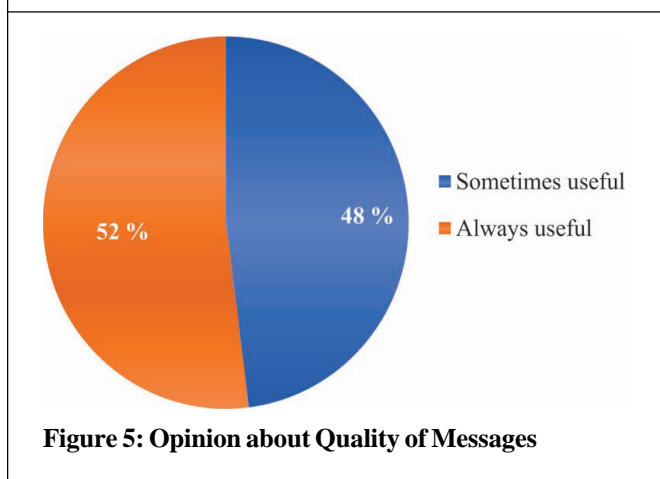
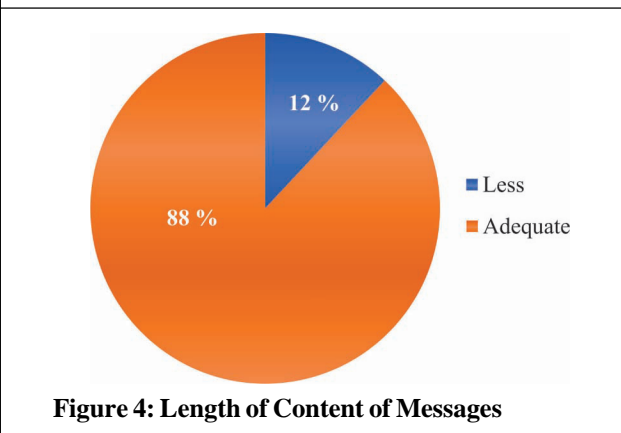
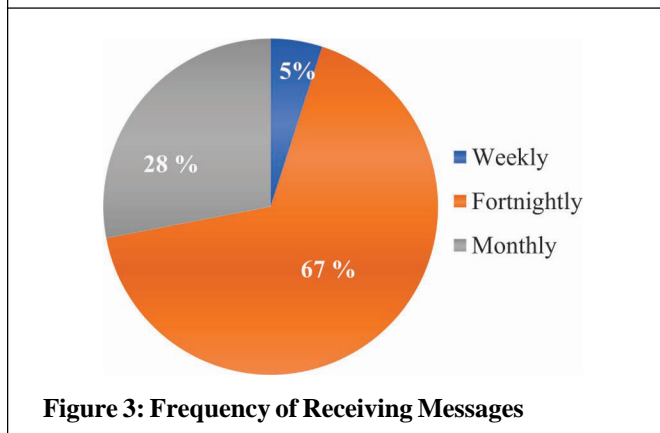
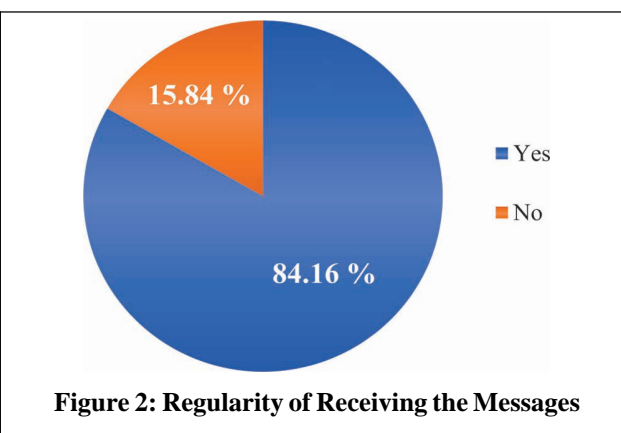
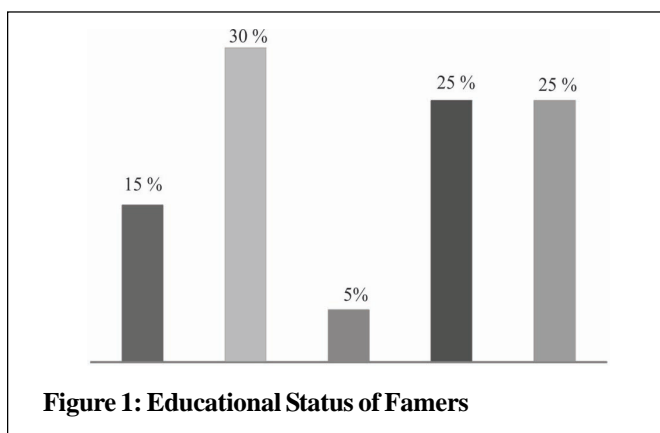
**Table 2: Farmers Feedback on Referring and Sharing of Agro-advisory Services**

Farmers Feedback on IARI agro-advisory	% Respondents		
	Never	Sometimes	Always
Do you refer the messages while taking decisions on your farm operations?	5.00	49.00	46.00
Do you share these messages with fellow farmers?	6.00	41.00	53.00

respondents expressed that the length of content of messages were adequate and 12 per cent respondents reported that the length of content of messages were less. Further, the data related to the opinion of quality of messages depicted in Figure 5 revealed that 52 per cent respondents in the opinion that the weather based advisory messages they received were always useful to them whereas 48 per cent respondents were in the opinion that the weather based advisory messages they received were somewhat useful to them. Approximately, 95 per

cent respondents agreed that agro-advisory messages are catering the local needs and preferences of people (Figure 6). However, some farmers suggested for sending the audio weather based agro-advisory messages in *hindi* language.

The data related to farmers feedback on referring and sharing agro-advisory services (Table 2) revealed that 49 per cent respondents reported that they sometimes refer the messages while taking decision of



farm operation whereas 46 per cent respondents reported that they always refer the messages while taking decision related to farm operations. Further, 53 per cent of the respondents reported that they always share these messages with the colleagues/fellow/neighboring farmers whereas 41 per cent farmers reported that they sometimes share these messages with the colleagues/fellow farmers.

### CONCLUSION

Mobile phones have tremendous potential to expand the access to and reach of public services in India. It is an important tool of ICT and has reduced the communication cost, quick and the cheapest source of reliable information on different topics related to agriculture. In case of agriculture, mobiles have provided economic benefit to the farmer by providing access to the day-to-day weather forecasting and market information as it had removed intermediates from the farmer to the market. A need based advisory services need to be developed and provided to the farmers on regular basis to harness the full potential.

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### REFERENCES

- Bahuman, A. and Kirthi, R. (2007). "aAqua Mini", available at: [www.agrocom.co.in](http://www.agrocom.co.in).
- Hudson, E.H. (1995). "Economic and Social Benefits of Rural Telecommunications: A Report to the World Bank", available at: [www.usfca.edu/fac\\_staff/hudson/papers/Benefits\\_of\\_Rural\\_Communication.pdf](http://www.usfca.edu/fac_staff/hudson/papers/Benefits_of_Rural_Communication.pdf).
- Karn, A. and Ghosh, S. (2018). Effectiveness of Farmers' Information Sources in Bihar, *Journal of Community Mobilization and Sustainable Development*, **13**(2), 367-373.
- Kumbhare, N.V., Padaria, R.N., Singh, P., Kumar, A. and Sarkar, S. (2015). Community Radio: Preferences, Opinion and Listening Behaviour of Farmers, *Indian Journal of Extension Education*, **51**(3&4), 20-24.
- Mehra, A. (2007). Reuters market Light now available in local post offices across Maharashtra, Press statement on December 20, available at: <http://www.reuters.com>.
- Mittal, S. (2012). Modern ICT for Agricultural Development and Risk Management in Smallholder Agriculture in India. CIMMYT. Socioeconomics Working paper-3, Mexico, D.F.:CIMMYT. <http://ageconsearch.umn.edu/handle>.
- Ramamritham, K., Bahuman, A. and Duttgupta, S. (2004). "aAqua: A database-backed multilingual, multimedia community forum", ACM Conference Proceedings.
- Raj, S. and Bhattacharjee, S. (2015). mExtension – Mobile Phones for Agricultural Advisory Services. Global Forum for Rural Advisory Services (GFRAS), pp 1-4.
- Singh, M., Burman, R.R., Sharma, J.P., Sangeetha, V. and Iquebal, M.A. (2015). Effectiveness of Mobile based Agro-Advisory Services in Addressing, *Indian Journal of Extension Education*, **51**(1&2), 32-38.
- TRAI (2018). Telecom Regulatory Authority of India. Press Release No. 91/2018.
- United Nations (2005). Global E-government Readiness Report: From E-Government to E-Inclusion. UNPAN /2005/ 14, United Nations, New York.
- Ysmail, S. (2008). The Importance of ICT for the Knowledge Economy: A Total Factor Productivity Analysis for Selected OECD Countries (<https://ideas.repec.org/h/izm/prcdng/200804.html>).