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Constraints faced and suggestions provided during the use of mobile based agro advisory services by state department of agriculture in Marathwada region

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Abstract

The present study was conducted in Beed and Nanded district of the Marathwada region of Maharashtra state which was selected purposively for the research study on the basis of maximum number of users of mobile based agro advisory services. In the constraints, majority (96.66%) of the respondents reported that, irregularity in delivering weather advisory services followed by network and connectivity problems in rural areas (95.00%), non-availability of time to go for distant markets (75.41%) and price fluctuation of different markets not received on time (74.16%), which were the major constraints found during the course of investigation. In order to overcome the said constraints some suggestions were given by the respondents they are as, majority (95.41%) of the respondents said provide accurate and timely weather advisory followed by improvisation of network and connectivity (94.58%) was another major suggestion given by them. In other major suggestion was provide timely credit for smooth agricultural operations (92.08%) was important suggestion followed by arrangement of proper transportation facilities (82.50%), as major suggestions. The respondents during the course of research also reported that, provide accurate and timely market information (73.15%) was also the bigger suggestion followed by provide new technologies on farmer's field (71.66%) was another suggestion and regular visit of extension personnel (59.58%) which was the important suggestion given by the respondents at the time of interview. In other suggestions like, Organize awareness programmes about mobile based agro advisory services, avoid repetition of the same advisory and improve credibility of the information delivered through mobile based agro advisory services were also suggested by the farmers.

Keywords: Constraints, suggestions, improvement, mobile based agro advisory services, farmers, respondents etc

Introduction

In the last few decades, information and communication technologies (ICTs) have provided immense opportunities for the social and economic development of rural people, and some technologies have surpassed others. 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. Mobile technology goes beyond geographic, socioeconomic, and cultural barriers and this large increase in mobile subscriptions, along with the recent roll out of 3G and 4G technology, can play a big role in the development of rural people. Mobile phones are devices that can create, store, access, and share information anytime, anywhere. But 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. So-called mobile-based extension and advisory services enable value-added services, such as mobile agro-services and machine to machine services, which help farmers monitor their crops and farm machinery through mobile phones. While value-added services are generally fairly accessible to all the farmers in rural areas, machine-to-machine services are more cost intensive and require infrastructure that is often not present in developing countries (Sarvanan and Bhattacharjee, 2015).

Overview of m Kisan Portal

Pervasive and extensive use of the ICT is an important tool of agricultural extension. Under

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the National e-Governance Plan – Agriculture (NeGP-A), various modes of delivery of e-enabled services have been envisaged. These include internet, touch screen kiosks, agriclincs, private kiosks, mass media, Common Service Centres, Kisan Call Centres, and integrated platforms in the departmental offices coupled with physical outreach of extension personnel equipped with pico-projectors and hand held devices. However, mobile telephony (with or without internet) is the most potent and omnipresent tool of agricultural extension. The project conceptualized; designed and developed in-house within the Department of Agriculture & Cooperation has widened the outreach of scientists, experts and Government officers posted down to the Block level to disseminate information, give advisories and to provide advisories to farmers through their mobile telephones. SMS Portal was inaugurated by the Hon'ble President of India on July 16, 2013 and since its inception nearly 50 crore messages or more than 152 crore SMSs have been sent to farmers throughout the length and breadth of the country. These messages are specific to farmers' specific needs & relevance at a particular point of time. These messages generate heavy inflow of calls in the Kisan Call Centres where people call up to get supplementary information.

SMS Portal for Farmers has empowered all Central and State Government Organizations in Agriculture & Allied sectors (including State Agriculture Universities, Krishi Vigyan Kendras, Agromet Forecasts Units of India Meteorological Department, ICAR Institutes, Organization in Animal Husbandry, Dairying & Fisheries etc.) to give information/services/advisories to farmers by SMS in their language, preference of agricultural practices and locations. To put it succinctly, almost every Government Department, Office and Organisation from the Ministry Headquarters down to the level of Block having anything to do with agriculture and allied sectors in every nook and corner of the country has been authorised to use this Portal to provide information to farmers on vast gamut of issues. USSD (Unstructured Supplementary Service Data), IVRS (Interactive Voice Response System) and Pull SMS are value added services which have enabled farmers and other stakeholders not only to receive broadcast messages but also to get web based services on their mobile without having internet. Semi-literate and illiterate farmers are also targeted to be reached by voice messages

Unique features of mKisan

- The SMS Portal has unique features like database to sift farmers down to Block level & to select specific agricultural commodities/animal/bird/fish, rating/correction of messages by the supervisory officers, searchable database of previous advisories, phone number-wise status report on a dashboard, drillable & graphical dashboard, query review interface with email piping etc. Some of the key features are explained in succeeding paragraphs.
- Nearly 3000 officers and experts from the Government of India (DAC, ICAR, DAHDF, IMD, CWC) and State Governments & its organisations down to Block level, SAUs, KVKs and AMFUs have been activated and are using the Portal in 12 different languages by using easy phonetic typing. More than thousand more such officers & experts have recently applied to get activated.
- About 70 lac farmers have already opted to receive advisories & services on their mobile phones. The farmers have been grouped based on the State, District,

Block and the Crops/Activities selected by respective farmers.

- Messages are sent based on technical literature prepared by the authorities, Government orders, websites and, most importantly, Farmers' Portal (Beta Version) of which SMS Portal is a part.
- Now, nearly 20 web based services across the country have already been integrated with the SMS Portal and many more are in the queue. Some of these include Buyer- Seller Interface, choice of machine & dealer, Kisan Call Centre, market prices, Agromet advisories, NeGP-A roll-out, farm-mechanisation, micro-irrigation, Animal husbandry, fertilizer testing etc.

Over the past few years India witnessed several experiments on agro-advisory service delivery through mobile phones such as IFFCO Kissan Sanchar Limited (IKSL), Reuters Market Light (RML), Kisan sanchar, Fisher Friend, M Krishi, and the recently initiated Kisaan SMS Portal. These service providers use a mix of text messaging and voice messaging along with mobile phone based applications. They provide information about weather, market prices, agro advisories, policies, government schemes, new technologies. Some of the service providers such as IKSL has reached more than 13 lakh farmers spread over 18 states in India. Though several studies (Aker 2008, Aker 2010, Aker & Fafchamp 2010, Mittal et. al 2010, World Bank, 2011) ^[2, 3, 4, 9] have demonstrated the potential of mobile phones in improving the capacity of farmers to cope with agricultural risks, many others (Mittal, 2012; Fafchamp & Minten, 2012) ^[11, 9] have questioned its real impact on farmers. If farmers have to benefit, the messages delivered through the system have to be "actionable" and available at the right time. It should also be able to create awareness, strengthen capability of farmer to take informed decisions and give alerts in case of emergencies like frost, hail storm, floods (Mittal, 2012) ^[11].

Services that are offered through mobile phones (referred to as 'm-services') could increase the utility of the phone to enhance human capabilities. M-services can expand existing functionalities for instance, through information services that allow users to access a wider range of information than would be available otherwise. Similarly, mobile phone-enabled platforms can facilitate the use of the phone for networking purposes. At the same time, m-services can offer additional functionalities to those available through the phone itself, for instance by allowing users to make financial transactions using m-payments. Conceptual and empirical research into these linkages is still missing, however. Mobile phones and m-services could offer particular opportunities for the rural poor who in the absence of landlines and computers often lack alternative means of telecommunication and internet access. Equally important are the ability to pay for the ICT-based services, the skills to use the technologies effectively and the accessibility and usefulness of the mobile content and functions. In particular the application of m-services in the agriculture sector has the potential to reach and assist the rural poor. In many developing countries, the sector is characterised by a large number of smallholder, often subsistence farmers with low productivity and limited use of agricultural technologies.

M-services have been flourishing in recent years as companies are starting to see the business opportunities in this area. The German software company SAP, for instance, is piloting supply chain management systems for small producers in Ghana, Nokia and Reuters Thomson are delivering information services to mobile phones users in

India, and Google is linking buyers and sellers through mobile and internet-based platforms in Uganda. In addition to large international companies, smaller local businesses are also starting to deliver services in sectors such as health, education and agriculture, supported by emerging innovation hubs in several developing countries (Baumuller, 2015) [5, 6]

Methodology

The present study was conducted in Beed and Nanded district of the Marathwada region of Maharashtra state which were selected purposively for the research study on the basis of maximum number of users of mobile based agro advisory services. From these two districts four talukas *i.e.* two talukas from each district were selected purposively for the research study. The list of respondents was obtained from the state agriculture department and accordingly the sample size was finalized. Overall 240 farmers from the two districts were purposively selected for the present study. Out of 240 samples

120 from Beed *i.e.* 60 from Ashti talukas and 60 from Ambajogai talukas were selected. The other 120 were constituted from Loha and Kandhar from Nanded district. In further, distribution of sample size, 12 respondents from one village so likewise 5 villages from each taluka were selected. The final total of villages was 20 from these two districts. Ex-post facto research design was adopted for this study. The data were collected with the help of pretested interview schedule from the respondents as per their convenience at their home or farms. The statistical methods and tests such as frequency, percentage, mean, standard deviation, co-efficient of correlation, multiple regressions, and Z test were used for the analysis of data

Results and Discussion

1. Constraints faced by the farmers during the usage of mobile based agro advisory services

Table 1: Constraints encountered by the respondents during use of mobile based agro advisory services

S. No.	Constraints	No.	%	Rank
1	Non-availability of plant protection measures in time	03	1.25	XVIII
2	Complex information delivered through SMS	03	1.25	XIX
3	Network and connectivity problems	228	95.00	II
4	Irregularity in delivering weather advisory services	232	96.66	I
5	Lack of knowledge about market information through MBAS	112	46.66	XIII
6	Disbelief about received advisory	104	43.33	XV
7	High cost of Mobile phones	117	48.75	XI
8	Lack of money for plant protection measures and fertilizers	137	57.08	IX
9	Inadequate supply of loan from cooperative society	218	90.83	III
10	Timely unavailability of credit	174	72.50	VII
11	Lack of knowledge about new technologies	162	67.50	VIII
12	Unaware about benefits of SMS advisory	135	56.25	X
13	Unaware about government schemes	115	47.91	XII
14	Unavailability of fertilizers and other inputs on time	180	75.00	V
15	The visits of the extension personnel is not in time	105	43.75	XIV
16	The extension personnel unable to spread awareness about MBAS	66	27.5	XVII
17	Price fluctuations of different market not received on time	178	74.16	VI
18	Lack of transportation facilities	73	30.41	XVI
19	Non availability of time to go for distant market	181	75.41	IV

In the constraints, majority (96.66%) of the respondents reported that, irregularity in delivering weather advisory services was ranked I among all the constraints followed by network and connectivity problems in rural areas (95.00%) was ranked II, non-availability of time to go for distant markets (75.41%) was ranked III and price fluctuation of different markets not received on time (74.16%) was ranked IV, which were the major constraints found during the course of investigation. As farmers mostly belonged to the rural areas they do not get proper network and connectivity which hinders the impact of mobile based agro advisory services among them.

Whereas, the visits of extension personnel not in time (73.33%) was then ranked V followed by timely unavailability of credit (67.91%) ranked VI, lack of knowledge about new technologies (66.25%) was ranked VII and inadequate supply of loan from cooperative society (65.83%) was ranked VIII. As these constraints are always keeping check on the farmers for any innovative approach to be adopted.

In other constraints, unaware about benefits of SMS advisory (62.08%) was ranked IX followed by lack of money for plant protection measures was ranked X, and unaware about different government schemes, high cost of mobile phones, lack of knowledge about market information, disbelief about received advisory, lack of proper transportation facilities, the extension personnel unable to spread awareness about mobile based agro advisory services, unavailability of fertilizers and other inputs on time, non-availability of plant protection measures in time, complex information delivered through SMS etc. were also reported by the respondents.

All the above said constraints were hindering the impact of mobile based agro advisory services in Marathwada region. Similar finding were reported by Debabrata and Bandyopadhyay (2013) [8], Bhandari (2014), Bhosale (2014) and Khandave, Suryawanshi (2015) [13] and Adsul (2016) [11]

2. Suggestions for improvement

Table 2: Suggestions provided by the respondents to overcome the constraints.

S. No.	Suggestions	No.	%	Rank
1.	Provide accurate and timely weather advisory	229	95.41	I
2.	Improve network and connectivity in villages	227	94.58	II
3.	Provide timely credit for smooth agricultural operations	221	92.08	III
4.	Visit of Extension Personnel should be on regular basis	143	59.58	VII
5.	Provide accurate and timely market information	177	73.75	V
6.	Avoid repetition of same advisory	115	47.91	IX
7.	Organise awareness programmes about MBAS	123	51.25	VIII
8.	Provide new technologies on farmers field	172	71.66	VI
9.	Improve credibility of the information delivered through MBAS	114	47.5	X
10.	Arrange proper transportation facilities	198	82.5	IV

In order to overcome the said constraints some suggestions were given by the respondents they are as, majority (95.41%) of the respondents said provide accurate and timely weather advisory was the ranked I suggestion given by the farmers followed by improvisation of network and connectivity (94.58%) was another major suggestion given was ranked II by them. In other major suggestion was provide timely credit for smooth agricultural operations (92.08%) was ranked III important suggestion followed by arrangement of proper transportation facilities (82.50%) was ranked IV, as major suggestions.

The respondents during the course of research also reported that, provide accurate and timely market information (73.15%) was also the bigger suggestion and was ranked V followed by provide new technologies on farmer's field (71.66%) was another suggestion and was ranked VI, and regular visit of extension personnel (59.58%) which was ranked VII, were also the important suggestion given by the respondents at the time of interview. In other suggestions like, Organize awareness programmes about mobile based agro advisory services, avoid repetition of the same advisory and improve credibility of the information delivered through mobile based agro advisory services were also suggested and they were ranked as VIII, IX, X respectively by the respondents.

These findings were similar with findings of Uma Prasher (2014) ^[14], Chapke *et al.* (2015) ^[7] and Khandave, Suryawanshi (2015) ^[7] and Adsul (2016) ^[1]

Conclusion

The constraints faced by the farmers during the use of mobile based agro advisory services such as irregularity in delivering weather advisory services, network and connectivity problems in rural areas, non availability of time to go for distant markets, price fluctuation of different markets not received on time, the visits of extension personnel not in time, timely unavailability of credit, lack of knowledge about new technologies, inadequate supply of loan from cooperative society were major constraints hindering its use. In order to overcome the said constraints some suggestions were given by the respondents they are as, provide accurate and timely weather advisory, improvisation of network and connectivity, provide timely credit for smooth agricultural operations, arrangement of proper transportation facilities. They also reported that, provide accurate and timely market information was also the bigger suggestion followed by provide new technologies on farmer's field, and regular visit of extension personnel, were also the important suggestion given by the respondents at the time of interview. They have also given some other suggestions like, Organize awareness programmes about mobile based agro advisory services, avoid repetition of

the same advisory and improve credibility of the information delivered through mobile based agro advisory services were also suggested

References

1. Adsul GB. Socio-economic impact of national Horticulture mission on its beneficiaries in Marathwada region. Ph.D thesis submitted to VNMKV, Parbhani (Maharashtra), 2016.
2. Aker JC. Does Digital Divide or Provide? The Impact of Cell Phones on Grain Markets in Niger. http://www.cgdev.org/doc/events/2.12.08/Aker_Job_Market_Paper_15jan08_2.pdf, 2008.
3. Aker JC, M Fafchamps. How Does Mobile Phone Coverage Affect Farm-Gate Prices? Evidence from West Africa. University of California, Berkeley. <http://www.aeaweb.org/aea/2011conference/program/retrieve.php?pdfid=629>, 2010.
4. Aker JC. Dial A for Agriculture: A Review of Information and Communication Technologies for Agricultural Extension in Developing Countries. Presented at Agriculture for Development Conference at the University of California, 2010.
5. Baumuller Heike. Agricultural Innovation and Service Delivery through Mobile Phones Analyses in Kenya. Doctoral dissertation submitted to Center for Development Research, The faculty of Agriculture, University of Bonn, 2015.
6. Baumuller Heike. Agricultural Innovation and Service Delivery through Mobile Phones Analyses in Kenya. Doctoral dissertation submitted to Center for Development Research, The faculty of Agriculture, University of Bonn, 2015.
7. Chapke RR, VR Bhagwat, Patil JV. Impact of national training on sorghum cultivation for value addition. *Indian Journal of Extension Education*. 2015; 51(1, 2):78-83.
8. Debabrata Mondal, Bandyopadhyay AK. Problem and prospect of National Rural Employment Guarantee Scheme in Jharkhand. *Journal of Progressive Agriculture*. 2013; 4(1):92-95.
9. Fafchamps M, B Minten. Impact of SMS-based Agricultural Information on Indian Farmers. *World Bank Economic Review*. 2012; 26(3). <http://wber.oxfordjournals.org/content/early/2012/02/27/wber.lhr056.abstract>
10. Mittal Surabhi, Gandhi S, Tripathi G. Socio-economic Impact of Mobile Phone on Indian Agriculture. ICRIER Working Paper no. 246, International Council for Research on International Economic Relations, New Delhi. <http://www.icrier.org/page.asp?MenuID=24&SubCatId=175&SubSubCatId=6,91>

11. Mittal Surabhi, Mamta Mehar. How Mobile Phones Contribute to Growth of Small Farmers? - Evidence from India. Quarterly Journal of International Agriculture. 2012; 51(3):227-244. DLG-Verlag Frankfurt/M. <http://ageconsearch.umn.edu/handle/155478>
12. Saravanan R, Suchiradipta Bm. Extension-Mobile Phones for Agricultural Advisory Services. Note 17. GFRAS Good Practice Notes for Extension and Advisory Services. GFRAS: Lindau, Switzerland. 2015.
13. Khandave SR, Suryawanshi PS. Impact of National Horticulture Mission on beneficiaries. Journal of Agriculture Research Technology. 2015; 40(2):348-350.
14. Uma Prasher. Mahatma Gandhi National Employment Guarantee Act and its impact on the beneficiaries. Asian Journal of Research in Social Sciences and Humanities. 2014; 4(4):50-60.
15. World Bank. E-source book. ICT IN AGRICULTURE Connecting Smallholders to Knowledge, Networks, and Institutions- Report Number 64605, 2011.