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KMAS as a Tool for Dissemination of Agricultural Technologies in Nagaon District of Assam

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Authors' contributions

This work was carried out in collaboration among all authors. All authors read and approved the final manuscript.

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ABSTRACT

Development of Agricultural and allied activities can be achieved through various approaches of Information and communication (ICT) tools. Kisan Mobile Advisory system (KMAS) is one of ICT approaches for dissemination of agricultural technologies to the farming community through SMSs. KVK, Nagaon created a registered farmers group and information related to crop production, insect pest control, dairy and poultry farming, fishery and other marketing related information was sent to users in monthly basis for many years. A sample size of 100 registered farmers were selected for the study in order to examine the impact of KMAS for technology dissemination in Nagaon district. With the help of Pretested scheduled with Simple Random sampling data were collected and analyze in percent analysis. The survey showed that majority of the farmers found agricultural information as increase in knowledge (41.00%), partially applicable (73.00%). The overall impact of the KMAS was low About at 55 percent, medium at 38 per cent and high at 7 per cent. Further they suggested that messages on latest technologies should be served flowed by local language, voice messages.

Keywords: ICT; KMAS; agricultural technology.

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1. INTRODUCTION

ICAT launched Kisan Mobile Advisory Service (KMAS) in order to disseminate agricultural information to rural community through SMS which was operated in each of the Krishi Vigyan Kendra in India covering awareness, crop production, horticultural production, animal health and disease management, fishery production, market related information, weather related information etc. Sandhu et al. [1] studied the degree and utility of KMAS and further concluded that there is very urgency to evaluate the impact of extension system for further improvement of the system for better delivery for future. Dash et al. [2] studied the response of KMAS users according to need & timeliness of information and revealed that for the rural farming community KMAS are very needful as messages are sent in right time ultimately reduces time lagged for application of improved scientific technologies in farmers field [2]. Earlier radio, TV, newspaper, telephones and magazines were playing important role for dissemination of information and communication technologies and now in 21st Century the modern ICTs as mobiles and computers and have created a revolution. ICT approaches like KMAS has emerged as one of the best approaches for disseminating agricultural information dissemination through main line extension system of Krishi Vigyan Kendras. But there is utmost necessary to evaluate ICT initiatives like Mobile Advisory in order to improve its efficiency. Kisan Mobile Advisory system (KMAS) is one of ICT approaches for dissemination of agricultural technologies to the farming community through SMSs. KVK, Nagaon created a registered farmers group and information related to crop production, insect pest control, dairy and poultry farming, fishery and other marketing related information was sent to users in monthly basis for many years. But there is no study has been taken in analyzing the overall impact of KMAS to deliver real-time agricultural information and knowledge which will lead to farmers decision making ability.

2. MATERIALS AND METHODS

The present study was conducted in Nagaon district of Assam. A list of registered farmers was prepared at KVK, Nagaon in order to deliver advisory services. Sandhu et al. [1] reported that majority of the farmers found agricultural information in the form of SMS through mobile phone as useful (69.3 %), comprehensible (74.7 %) and timely (64.7%). A list of 100 respondents were selected randomly from the list to assess the impact of KMA services a device was developed and responses of the respondents were recorded. A pretested schedule was used along with percent and tabular analysis were done for the study. Nine points have been considered for continuum scale and respondents are allowed to assign score against each nine points. Finally, an index was worked out considering the nine parameters to assess the impact of KMA services with the help of following equations. Apart from these, Logit Regression Analysis was done for various respondents in order to study factor affecting the adoption of KMAS. Farmers' responses of each parameter are codified as scores. Barman et al., (2019) also used Logit Regression analysis to examine the factors affecting farm mechanization [3]. Logit Analysis was with the help of following formula: $P = 1/(1+e^{-AL})$ Where, P is the probability that famers adoption level AL = x (1) + x (2)*AGE+ x (3)*OCC+ x (4)* EDU+ x (5)*LH+ x (6)*TRN+ x(7)* SO + x (8)*EF+ x (9)* IO + x (9)* ME Where, a) AGE is the age of head of the household (proxy for experience) b) OCC is the Occupation of the farmers, farming: 1 otherwise 0 c) EDU is the maximum education level of head of the household d) LH is the farm size e) TRN is the Training received at KVK f) SO is Scientific orientation YES=1, 0 Otherwise g) EF is the Experience in Farming. h) IO is the Innovative proneness, i) ME is Mass media exposure yes=1, 0= Otherwise j) AL is Adoption Level.

3. RESULTS AND DISCUSSION

Development of Agricultural and allied activities can be achieved through various approaches of Information and communication (ICT) tools. Kisan Mobile Advisory system (KMAS) is one of ICT approaches for dissemination of agricultural technologies to the farming community through SMSs. From the findings from Table 1 it could be concluded that for large majority messages were somewhat needful for large majority i.e., 61.00% of respondents. The messages were getting timely for large majorities i.e., 63% of the respondents whereas for 73 % of the respondents found the messages were partially applicable. Thus, overall impact of the KMAS was found low (‹50) at 55 per cent, medium (50 - 99) at 38 percent and high (›99) at 7 per cent amongst the respondents. This result is conformity with the finding by Kanesiya et al. [4] that overall impact of Kisan Mobile Advisory

system (KMAs) and revealed that higher proportion of the beneficiaries 39.17 per cent was obtained incomplete knowledge followed by complete knowledge confronted by 35.00 per cent beneficiaries and partial knowledge confronted by 25.83 per cent beneficiaries respectively. On the contrary, Hadiya (2019) also assessed the Impact of Kisan Mobile Advisory (KMA) and revealed that indicates the overall impact of technology imposed high impact on 62.22 per cent of KMA members of farmer category [5]. Similarly, Khedkar et al. [6] revealed that KMAS sent by KVK, Madhya Pradesh messages were medium understandable for large majority (48.75%) and needful & timely for 82.50 percent of the farmers. Jaiswal et al. [7] revealed that famers have a positive attitude towards the use of ICT tools for dissemination of agricultural technologies and also revealed that majority of the respondents who followed KMAS (48.6%) followed by medium (30.6%) and low (24.3%).

Table 1. Distribution of progressive farmer according to different parameters [N=100]

Sl. no	Parameters		Frequency (%)
1	Simple and understandable	Highly understandable	34
		Partially understandable	45
		Not understandable	21
2	Need based information	Needful	16
		Somewhat Needful	61
		Not Needful/Undecided	23
3	Time based information	Timely	63
		Undecided	17
		Not timely	20
4	Applicability of message	Fully applicable	7
		Partially applicable	73
		Not applicable	20
5	Save time & money	Agree	18
		Disagree	21
		Undecided	61
6	Increase in social contact	Agree	2
		Disagree	11
		Undecided	87
7	Increase in knowledge	Agree	41
		Disagree	25
		Undecided	34
8	Increase in productivity	Agree	18
		Disagree	20
		Undecided	62
9	Adoption of KMA Services	Fully adopted	15
		Partially adopted	39
		Not adopted	46
10	Overall impact of KMA service	Low (< 50)	55
		Medium (50-99)	38
		High (>99)	7

Table 2. Opinion of KMA service users in making the KMA service more effective (N=100)

Sl. no	Opinion	Frequency (%)	Rank
1	The message should be simple and understandable	38	IV
2	Message should be appropriate to the farming situation	35	V
3	The message should be served in local language	51	II
4	Voice message facility should be provided	47	III
5	Name of the insecticides, pesticides etc., approximate market prices should also be communicated	30	VI
6	Message on agriculture related enterprises should also be provided	13	VII
7	Market related up to date information should be given	9	VIII
8	Message on latest technologies on agriculture and allied sector should be provided	69	I

Farmers from Nagaon district accept the ICT tools, i.e., KMAS for gaining technical knowledge for better production and satisfied with the performance of KMAS. Table 2 stated the prioritization areas of KMAS which should be emphasized for making services more effective. Majority of the respondents opined that message on latest technologies should be served followed by in local language. Patra et al. [8] also analyzed Prioritization of Suggestions of respondents in order to increase effectiveness of KMAS and suggested that message should be served in local language. Respondents ranked 3rd priorities for voice message followed by simple and under stable, suitable message for farming situation, provision for pesticide, insecticide name along with market prices, market information and market news respectively. Barman & Deka (2019) revealed that literacy rate and mechanization adoption has a significant relationship i.e. coefficient of EDU (4.325) was positive and highly significant level confirming that the adoption of farm mechanization was more prevalent among the farms having relatively literate in Assam, India. Bhatnagar et al. [9] analyzed the relationship between profile characteristics and impact of KMA services and found gender, education, annual income, material possession, social participation, innovativeness, scientific orientation, mass-media exposure and extension contact had significant relationship with the KMAS services. Barman et al. [10] also analyzed factors affecting the impact of training and reveals that training received at KVK had shown positive significant at 5 per cent probability level with impact of training and scientific orientation was positively and significantly related with impact of training. Both Occupation and Education had negatively related with impact of training where occupation was insignificant with impact of training. The others variable viz., Ager, Size of holding, Experience in Farming, Innovative proneness had positive insignificant relationship with impact of training.

4. CONCLUSION

KMAS serves as most useful tools for dissemination of agricultural technologies via text covering large numbers of framers at grassroot level with less time and money. For greater use of KMAS there should be frequent evaluation in order to eradicate malfunctioning of KMAS and smooth delivery of the message. KVK, Nagaon created a registered farmers group and information related to crop production, insect pest control, dairy and poultry farming, fishery and other marketing related information was sent to users in monthly basis for many years. Farmers from Nagaon district accept the ICT tools, i.e., KMAS for gaining technical knowledge for better production and satisfied with the performance of KMAS.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

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