

## Assessment and Refinement of KMA in Tikamgarh District (M.P.)

Rupendra Kumar<sup>1</sup>, Sunita Mishra<sup>2</sup>, R.S. Kushwah<sup>3</sup> D.K.Jain<sup>4</sup> and S.V.S. Chauhan<sup>5</sup>

1 & 4. SMS, 2. PC, KVK, Badwani,(M.P), 3. PC, KVK, Gwalior, 5, SMS, KVK, Morena (M.P.)

Corresponding author e-mail: yaduwansi\_2009@rediffmail.com,

### ABSTRACT

*Agriculture being highly skill oriented and technical intensive needed to be given high priority. At present, the ratio of the farmers to the extension worker is 1000 :1 , which is really very less. Although the appointed Rural Agriculture Extension Officers (RAEOs) disseminating the information without having much accountability. These two issues have created the agency to help and guide the farmers properly. The Kisan Mobile Advisory service has provided to 98 farmers, 85 extension workers and 15 input suppliers of the block during the assessment year. Thus sample constituted 198 respondents during 2008-2009. In 2009-10 and 2010-11 during the refinement of technology KMA has been disseminated in whole district to 600 farmers, 250 RAEOs and 150 input suppliers of the district. Total 85 KMA have been disseminated during 2008-09 and 111 KMA in 2009-10 and 2010-11 the year in different field of Plant Protection (55), Horticulture (44) , Animal husbandry (33) , crop production (32) Soil fertility management (12 and Resource conservation (20) . The KMA sandesh had been disseminated among the respondents on the basis of need and time .The data were analysed with the help of structure schedule from the respondents which made by the researcher. During the assessment year the results showed that cent per cent farmers appreciated the technology in receiving need based information, information received in a few second and the appropriate time of information delivery by the Krishi Vigyan Kendra . The majority of the farmers supported the message in other statements i.e. strong linkage with KVK (96.00 %) ,KMA work as a reminder (80.00 %) developing information bank (78.00 %) and possible for giving feedback ( 62%), while in case of other statements i. e. easy to understand (50.00 %) , increase social contact (52%)and save time and money (50.00 %)farmers given their average opinion/agreement about these statements. 85.00 per cent farmers have demanded the sandesh should be in hindi language instead of Roman English. During the refinement the data revealed that cent per cent farmers appreciated the KMA service in hindi language, while in case of Extension personnel and input supplier have no language problem.*

**Keywords:** Kisan Mobile Advisory (KMA), Information Communication Technology (ICT).

**R**ural farmers are producers and consumer also in the food security equation. Their actions production harvesting and marketing are critical determinants of the global food security. Information plays a critical role at every stage of this action chain. In modern world, information transfer to and from the rural farmers hinges upon the tools of Information communication Technologies (ICTs) where telecentres and mobile phone application constitute major part. Since 1990s, tele-centres have been experimented with a model to provide ICT opportunities to rural communities including farmers (Barbara & Foote,2007) Although the study progress made by mobile phone industry since 2001 brings new hope to formulate solutions. Such hopes were fuelled by the ability of mobile phone to penetrate into the bottom of the pyramid sector. In Srilanka, 23.00

per cent growth in the use of mobile phones was reported among the bottom of the Pyramid communities (Poorest people) between 2001 and 2006 . In the Philippines and Thaailand, the per centage figure stood as high as 60.00 % and 75.00 % by 2006 (Samaraliva, 2007). Research indicates mobile access has somewhat contributed to the improvements of poor lives and supported poverty reduction (Silva & Zainudeen, 2007)

Indian economy is traditional agrarian economies were once half of the GDP used to be form agriculture and allied sectors. The latest situation is changing dramatically. According to *Economic census (2005)*, 85.00 per cent of the households are operating on 2 ha. of farm land or less than that. Recently National Assessment survey of farmers *NSSO ( 2005)*, observed

that the average monthly per capita expenditure of a farm household is just rupees 503 with 27.00 per cent of farmers not liking farming while 40.00 per cent felt that if option given they prefer other carrier. Today's farmers want not only the two times bred for their family from their hard work, but also surplus food production, which can be sold in the market to get more income to fulfil their daily needs. Now a day in India private sector initiatives like contact farming has helped in commercialization of the agriculture sector. During previous decade, it has been observed that several new concepts and theories have proposed and implemented for substituting the traditional methods of extension like-personnel contact, group meeting, demonstration and so on. Introduction of Information Communication technology (ICT) is one of them, which enable the dissemination of requisite information at right time to the needy persons at their doorsteps. This revolution in information technology has made access to the information easy and cost effective to the rural farming community also.

At present, the ratio of the farmers to then extension worker is 1000:1, which is really very less. While the appointed Rural Agricultural Extension Officers (RAEOs) disseminated the information to the farmer without having much accountability and specialization in particular subject. These two issues have created the need to help and guide the farming community properly. The cost factor in face to face information dissemination at the right time and the difficulties in reaching the target audience have also created the urgency to popularise the ICT among the farmers. It is the advantage of ICT that information can be upgraded at minimum cost.. There are several models of ICTs in Indian agriculture, which have made a significant difference in the delivery of information in rural areas. Kisan Mobile Advisory (KMA) had been one among those and worked successfully in disseminating the latest information in the district to the ultimate users. The centre has used the linear model of communication ie. SMCR, which involved four major components of communication process i.e. Sender/Source? Message/Information, Channel/ Medium and Reciever/ Audience. The KMA services have been provided to the respondents with consultation of experts of different field by the centre. In Madhya Pradesh, the data revealed that total 6.0 crore population having 90,00,00 mobile phone which means that every five member farming family having one mobile phone. Kisan Mobile phone

had been found very effective tool for faster dissemination of information among different categories of respondents for making agriculture sustainable in the use of ICT tools like mobile phone. No single channel can be reached to such vast population within few second and low cost to convey as well as motivate the rural community the day to day information. Keeping in view the importance of KVK-KMA and the constraints in the farmer's field has been with the following objectives:

1. To disseminate the need based and timely information to the respondents.
2. To minimise the information losses by making direct contact to the farmers.
3. To analyse the feedback of the KVK- KMA service.
4. To assess the impact of the KVK-KMA service on the respondents.

## METHODOLOGY

The present study was conducted in Tikamgarh district of Madhya Pradesh state during 2008-2009, 2009-10 and 2010-11. The district was selected purposively because of the working area of Subject Matter Specialist. The district consists six blocks i.e. Tikamgarh, Nibadi, Prathvipur, Baldevgarh, Jatara and Palera. During the assessment year in 2008-09 the total 198 respondents were selected from tikamgarh & Jatara blocks personally as well as suggested by the RAEOs of the district who have mobile phone. Out of the total respondents 98, 85 and 15 were farmers, Rural Agricultural Extension officers and input supplier, respectively Two KMA in a week have been delivered during the assessment year in roman english language, while, one KMA in hindi language in a week has been disseminated on the basis of refinement of KMA . During the refinement years 2009-10 and 2010-11 the total respondents were 1000. Out of which 600, 250 and 150 were farmers, RAEOs and Input suppliers of the district .Out of which 100, 50 and 50, farmers, RAEOs and Input Suppliers were intervened for assessment of the impact of KMA service. Data were analysed by using frequency, mean and per centage.

## RESULTS AND DISCUSSION

*Distribution of KMA on the basis of area :* Table 1 revealed that during the assessment and refinement years during total numbers of 196 Kisan Mobile advisory information disseminated among the KMA users

in the areas of Plant Protection (55), Animal husbandry (44), Horticulture(33), Crop Production(32), Resource Conservation (20) and Soil Fertility(12). 85 and 111KMA have been disseminated during 2008-09 and 2009-11, respectively. Nearly one half of the total KMA has been disseminated in the field of plant Protection and Horticulture because of district having Soybean, Black Gram, Gram, Mustard in field crops , while small area of vegetable has been opted by the large numbers of small land holders for their livelihood specially in Brinjal, Zinzer, Arvi,Chilli, Tomato, and Cucurbits crops.

Table 1. Distribution of KMA on the basis of area.

S. N.	Areas of KMA	No. of KMA delivered		Total No. of KMA delivered
		2008-09	2009-10 and 2010-11	
1	Plant Protection	27	28	55
2	Live-Stock Production and Management	20	24	44
3	Horticulture	12	21	33
4	Crop Production	20	24	32
5	Soil Fertility	4	8	12
6	Resource Conservation	2	18	20
	TOTAL	85	111	196

*Extent of agreement of the respondents with KMA statements* : Table 2 showed during the assessment

year that almost cent-per cent farmers were agreed with the statements in received need based information, spend few second for receiving information, while it were only 52, 28 and 29 per cent in case of other sources of information. Easy to understand, save time and money and increase social contact i.e. 50, 50 and 52 per cent farmers were showed average agreement about these statements, respectively. During the assessment year 85 per cent farmers demanded the KMA in hindi language instead of Roman English , while, in case of RAEOs and Input Suppliers have not demanded the KMA in hindi language because of high education. RAEOs and Input Suppliers more than two third of the respondents agreed/positive opinion about the KMA statements disseminated by the centre, while, in case of their counterpart i.e. other source of information respondents had average agreement with only two statements i.e. received need based information and easy to understand while in case of other statements respondents have low level of agreements. On an average basis two third KMA users i.e. 77.75, 98 and 97 per cent farmers, extension personnel and input suppliers have agreed with the statements, respectively. It can be concluded from the findings that not only extension personnel but also ultimate beneficiaries i.e. farmers had agreed with the Kisan Mobile Advisory (KMA) statements delivered by Krishi Vigyan Kendra at their doorsteps without paying a single coin by them.

Table 2. Extent of agreement of the respondents with KMA statements during 2008-209

S.N.	Statements asked from KMA users	KMA Respondents				Other Information Sources (198)
		Farmers (98)	RAEOs (85)	Agro-Input Providers (15)	Total (198)	
1	Received need based information	98(100)	84(100)	15(100)	187(95)	103(52)
2	Spend few second for receive information	98(100)	85(100)	15(100)	198(100)	56(28)
3	Easy to understand	50(51)	85(100)	15(100)	150(76)	120(61)
4	Appropriate time of information	98(100)	85(100)	15(100)	198(100)	57(29)
5	Develop information bank	78(79)	85(100)	15(100)	178(90)	56(28)
6	Increase social contact & importance	52(53)	84(99)	14(93)	150(76)	59(30)
7	Save time and money	50(51)	85(100)	15(100)	150(76)	52(26)
8	KMS also work as a reminder	80(82)	83(98)	15(100)	178(90)	28(14)
9	Possible for giving feedback	62(63)	80(94)	15(100)	157(79)	64(32)
10	Strong linkage with KVK	96(98)	81(95)	12(80)	189(95)	57(29)
	Total	762(78)	837(98)	146(97)	1745(88)	589(30)
	Mean Score	76.20	83.70	14.60	174.5	58.9
	Suggestions given by user for effective KMA					
	Need to change KMA in Hindi language	83(85)	-	-	-	(86)
	KMA had delivered once in a week	83(85)	62(73)	3(20)	-	
	You may pay for KMA	16(16.3)	74(87)	-	-	
	Neutral response about paid KMA	84(86)	24(28)	-	(100)	
	Sometimes/ mobile/ contact No. should be mentioned in KMA for queries	98(100)	39(46)	-	-	

Figures in parenthesis indicate percentage

*Extent of agreement of respondents during refinement of KMA* : The KMA has been refined on the basis of suggestions made by the respondents during the assessment of KMA in 2008-09. 85 per cent farmers showed that language of advisory should be in hindi language instead of roman English , while in case of input suppliers and extension personnel have no problem about the roman language because of higher education by these persons. Table-3 clearly revealed that almost cent-per cent KMA user farmers agreed with the statements i.e. timeliness, appropriateness and relevance

to language, while, majority of respondents were agreed with readability, quality of content, understand ability o message and relevance to need and time. Almost cent per cent extension personnel and input suppliers were agreed with all statements of the KMA service. On an average basis 98 per cent KMA users (farmers) agreed with the statements, while it was only 56.20 per cent in case of their counterpart (other sources of information). It could be inferred that ultimate user's i. e farmers appreciate the message in hindi language rather than roman English.

Table 3. Extent of agreement of the respondents with KMA information during 2009-2011

S.N.	Statements asked from KMA users	KMA Respondents				Other Information Sources (200)
		Farmers (600)	RAEOs (250)	Agro-Input Providers (150)	Total (1000)	
1	Timeliness	100(100)	50(100)	50(100)	200(100)	64(52)
2	Appropriateness	100(100)	50(100)	50(100)	200(100)	96(48)
3	Readability	98(98)	47(94)	46(92)	192(96)	106(53)
4	Quality of content	93(93)	48(96)	46(92)	194(97)	138(69)
5	Understandability of message	97(79)	49(98)	49(98)	195(98)	124(62)
6	Relevance to need and time	98(98)	48(96)	47(94)	194(97)	138(69)
7	Relevance to language	100(100)	50(100)	50(100)	200(100)	122(61)
	TOTAL	686(98)	342(97.7)	338(96.5)	1338(98)	788(56)

Note: 100 farmers out of 600, 50 RAEOs out of 250 and 50 Agro-input suppliers out of 150 were intervened for analysis of data Figures in parenthesis indicate percentage

*Impact assessment of KMA* : Majority (71.00%) of the KMA user farmers were conveyed the message to the 1 to 3 other farmers among the social system, while, 20.00 per cent KMA farmers were not conveyed the message to the single farmers among the social system. Only 9.00 per cent KMA users farmers were disseminate the information 4 to 6 non users KMA farmers. Majority (62.00%) of the Rural Agriculture Extension Officers have conveyed the KMA information 10 to 15 farmers in the working area, while 28.00 per

centage RAEOs disseminate/conveyed the message to 15 to 20 farmers. It could be concluded that not only RAEOs but also KMA user farmers were multiplying the efficiency of message among the social system. The results in case of input suppliers were contradictory with that of KMA user farmers and input suppliers that. 44.00 and 56.00 per cent input suppliers were conveyed the KMA sometimes and rarely, respectively, while, non was found in case of regular dissemination of information to the ultimate users of information.

Table 4. Distribution of KMA users according to their frequencies of message conveyed

S.N.	Farmers		In- service personnel		Input Suppliers	
	Category of Conveyed Farmers	Farmers (n=100)	Category of Conveyed Farmers	RAEOs (n=50)	Category of Conveyed Farmers	Input Suppliers (n=50)
1	0	20(20)	5-10	5(10)	Regularly	0
2	1-3	71(71)	10-15	31(62)	Sometimes	22(44)
3	4-6	9(9)	15-20	14(28)	Rarely	28(56)

*Distribution of farmers according to their adoption of KMA in different areas* : 72.00, 60.00 and 58.00 per cent KMA users farmers fully adopted the delivered

information in the field of Plant protection, Crop Production and Live Stock Production and Management, respectively, while it were only 12, 13 and 14.00 per cent

in the field of Pomology, resource conservation and Soil fertility management, respectively. It could be inferred from the findings that two third disseminated information fully adopted by the KMA user farmers because of district has major crops like-Soybean, Black-Gram in kharif season ,Gram, Mustard in rabi season and small holders were adopted the vegetable cultivation in small area like Arvi, Zinger, Cucurbits, Chilli, Tomato for their

livelihood,theirore, these crops required much attention of plant protection measures .Pomology was the least fully adopted KMA area because district has small area and farmers not given much attention towards it. Information related to soil fertility and resource conservation were partially adopted by majority (86.00 and 87.00%), of KMA user farmers, respectively due to complexity of information in adoption.

Table 5. Distribution of farmers according to their adoption of KMA in different areas

S.	Category of areas	Farmers (100)				Non-adopted
		Fully adopted	Ranked	Partially adopted	Ranked	
N.						
1	Plant Protection	72	I	28	VII	-
2	Pomology	12	VII	88	I	-
3	Vegetable	52	IV	48	IV	-
4	Crop Production	60	II	40	V	-
5	Livestock Production & Management	58	III	42	VI	-
6	Soil Fertility	14	V	86	III	-
7	Resource Conservation	13	VI	87	II	-

**TOTAL** 281  
*Distribution of KMA users according to their frequencies of contact with Subject Matter Specialist (SMS) and Krishi Vigyan Kendra:* Table 6 showed that only 5.50 per cent KMA user farmers were made regular contact with the KVK as well as Subject Matter Specialist related to discussion about the problems of farmers fields as well as their solution The finding get support with Sarvodaya Fusion Operation (*Fusion, 2009*) who observed that only 5.00 per cent farmers made interaction with (ICT) tele centres regarding information. 22.00 per cent of RAEOs were made regular contact with the centre as well as Subject Matter Specialist, while none was found in case of Input Suppliers. 100.00, 79.83 and 54.00 per cent KMA users were never made contact with the Krishi Vigyan Kendra as well Subject Matter Specialist. The major areas of problem discussion and solving were Plant Protection (80%) of farmers as well as RAEOs, while, negligible areas in case problem discussion and solving were resource conservation and soil fertility management. It could be concluded that in both the negligible areas KMA users were not sown their interest in problem discussion and solving but now a days both the areas have very emerging because without these areas our production and productivity could not be sustained. So it is direct need to motivate Rural Agriculture Extension Officers as well farmers of the area to take care about these areas for future security our nation (Table-7).

Table 6. Distribution of KMA users according to their frequencies of contact with SMS of KVK

S.N.	Category of KMA users	Regularly	Rarely	Never
1	Farmers (600)	33(5.5)	88(14.67)	479(79.83)
2	Extension Personnel(250)	55(22)	60(24)	135(54)
3	Input Suppliers(150)	-	-	150(100)

Table 7. Area wise distribution of problems discussed by KMA users with SMS of KVK

S.	Areas of problem discussion	Farmers	Extension
N.		(%)	personnel (%)
1.	Plant Protection	81	80
2.	Crop Production	8	9
3.	Animal production & management	6	3
4.	Horticulture	5	6
5.	Soil fertility	1	2
6.	Resource conservation	1	-

## CONCLUSION

It could be concluded on the basis of analysis of data that KMA users i.e. farmers, Rural agriculture extension officers and input suppliers were getting benefit from the Kisan mobile advisory without any payment at their doorsteps. Almost cent per cent KMA users farmers appreciated the information in the areas of received need based information, spent few second for receiving information and appropriate time of information, while it were only 52.00, 28.00 and 29.00 per cent, respectively. In case of overall 88.00 per cent KMA

users appreciate the technology, while it was only 30.00 per cent in case of other sources of information.

On the basis of interpretation of data showed that only 52.00 per cent KMA users farmers show the agreement about the Roman English language of the information it means about 50.00 per cent of the farmers not agree with the roman English language, therefore it is desired need to send the information in a local language because during the refinement of KMA 85.00 per cent KMA

users farmers had desired to change the information in local language. Information should be edited properly by the subject matter specialist before sending to the KMA users. Data revealed that majority (71.00%) of the KMA farmers conveying the message only to 1 to 3 KMA non users, So the extension personnel should motivate the KMA users farmers to disseminate the information among non users farmers of the society for better adoption of the recommended technologies.

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