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**Original Research Article**

# Information Empowers Farmers: Farmers Survey on Information Needs of the Beneficiary Farmers of Kisan Mobile Advisory Services (KMAS)

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**A B S T R A C T**

In the era of knowledge, a major role has been played by information and communication technologies like newspaper, magazines, radio and television since many decades. Also, a revolution has been created by modern ICTs tools such as mobile phone as well as its messaging service, because it is easiest and fast communication tool of ICTs. Mobile phone services in the agricultural sector have provided information on market, weather, transport and agricultural techniques to contact with concern agencies and department. Kisan Mobile Advisory Services (KMAS) is one such initiative of ICT which provides location-specific and crop specific farm advisory services and facilities to the farming community in a given area. Kisan Mobile Advisory Service is the communicative service rendered by the KVK, in which message in the form of SMS are provided to the farmers. The Kisan Mobile Advisory Services are benefitting the farmers by communicating the day to day agricultural information. Therefore, it is essential to determine whether the information gained by the farmers through this ICT initiative is useful and also based on their information need or not. So that, main objective of this study was to find out the various needs of the beneficiaries of Kisan Mobile Advisory Services. 120 KMAS beneficiaries were selected randomly for interview through local language interview schedule. Findings of this study shows that, majority of the respondents agreed that information on insect management was most needful and with regards to number of SMS sent pertaining to different discipline. Usefulness of the message as perceived by the KMAS beneficiaries, majority of farmers accepted that the subject area value addition to be not useful.

**Keywords**

Kisan Mobile Advisory Services (KMAS), Information Needs, Information Communication Technology (ICT), Mobile Phones and SMS

## Introduction

Agriculture has been continuously playing a vital role in economic growth of India. Sustained growth of agriculture sector is essential to meet the food and nutritional security of a growing population, provide livelihood and income generation opportunities in rural areas and for steady growth of the industry. Today, a new paradigm of agricultural development is fast emerging in country, the overall development of rural areas is expanding in new directions; old ways of delivering important services to

people are being challenged; and traditional societies are being transformed into knowledge societies. In this knowledge era, a major role has been played by information and communication technologies like newspaper, magazines, radio and television since many decades. Also, a revolution has been created by modern ICTs tools such as mobile phone as well as its messaging service, because it is easiest and fast communication tool of ICTs.

Use of ICTs in agricultural extension services especially mobile phone services in the agricultural sector has provided information on market, weather, transport and agricultural techniques to contact with concern agencies and department. Mobile phones have provided new opportunities for rural people to obtain awareness and information about agricultural issues, problems and its usage for the improvement of agriculture. ICT has launched a new initiative called Kisan mobile advice service scheme to cater the requirements and emerging need of the farmers. Kisan Mobile Advisory Services scheme is used in Krishi Vigyan Kendra's main line extension system.

Kisan Mobile Advisory Services (KMAS) is one such initiative of ICT which provides location-specific and crop specific farm advisory services and facilities to the farming community in a given area. The Kisan Mobile Advisory Services (KMAS) delivers real-time agricultural information and customized knowledge to improve farmers' decision making ability so that they may enable to increase their production and productivity, better aligning the farm output to market demands; securing better quality and improved price recovery in a globally competitive agrarian economy.

Kisan Mobile Advisory Service is the communicative service rendered by the KVK, in which message in the form of SMS are provided to the farmers. The significant feature of Kisan Mobile Advisory Service is that it provides information by SMS facility (16 characters). 2 SMS in a week are sending, depending on the local needs comprising all crucial sectors of farming like crop production, plant protection, horticulture and animal science etc.

The Kisan Mobile Advisory Services are benefitting the farmers by communicating the day to day agricultural information. Therefore, it is essential to determine whether the information gained by the farmers through this ICT initiative is useful and also based on their information need or not and also many other aspects related with the use of Kisan Mobile Advisory Services. . So, in this regards the survey conducted on ascertain the various information needs of the beneficiaries of Kisan Mobile Advisory Services.

## Materials and Methods

The locale of the study was Bilaspur district in Chhattisgarh state. Bilaspur district was selected purposively due to the reason of because of the presence of maximum of KMAS beneficiaries and their availability. Out of total 7 blocks in the Bilaspur district only 4 blocks namely Bilha, Masturi, Takhatpur and Pendra will be selected purposively looking to the maximum number of KMAS beneficiaries and their availability. 30 respondents from each selected block will be considered as respondents. In this way total 120 respondents will be selected randomly from the list of beneficiaries of respective block available at KVK headquarters. The interview schedule was prepared in accordance with the objectives of the study. Also, the interview schedule was converted in the local language, so that the farmers can easily respond to the interviewer.

Main objective of this study was to find out the various needs of the beneficiaries of Kisan Mobile Advisory Services. Need was operationalized as the requirement of the information on different agriculture subjects by the respondents.

The information need on different aspects of 10 discipline/subjects was asked to the respondents. The respondents was asked to marked their responses according to their level of need on various subject matter on three point continuum as most needful, needful and not needful with 2, 1 and 0 scores respectively. The frequency and percentage analysis was done to present the data. Mean percent score (MPS) was also calculated and rank were assigned to each subjects accordingly.

### Usefulness of the message as perceived by the KMAS beneficiaries

Usefulness was operationalised as the perceived usefulness of KMAS messages by the farmers. In order to measure usefulness of KMAS messages by the farmers, self-assessed index was developed by researcher. Usefulness of KMAS schedule was used to evaluate usefulness of KMAS messages as perceived by the KMAS beneficiaries which was developed by the researcher based on messages sent in last five years (2014-2018) through Krishi Vigyan Kendra, Bilaspur.

The respondents were asked to indicate their level of usefulness about the subject matter on three point continuum viz most useful, useful and not useful with 2, 1, and 0 scores respectively. Frequency and percentage analysis was done to present the data. The overall usefulness was determined by categorizing the respondents into three categories using mean and standard deviation after summing the scores of the respondents.

## Results and Discussion

The Table No.1 here shows that a larger section of the respondents (80.83%) most needful information on insect management from KMAS, followed by 74.17 per cent respondents most needful information on weed management, and 69.17 respondents required information on disease management. 51.67 per cent respondents needful information through messages on storage, 48.33 per cent respondents on agricultural implement, and 46.67 per cent respondents on soil test. Also, the respondents did not needful to gather information on value addition (98.33%), fishery (97.50%), nutrition (97.50%), poultry (88.83), mushroom production (85%) and many other disciplines.

Table 1 shows that among all needs insect management under agronomical crop ranked I with MPS 90% while weed management ranked II with MPS 85.42 and disease management under the category of agronomical crop ranked III with MPS 83.75. Nutrition under home science ranked last as XXX with MPS 1.25%.

### Usefulness of the message as perceived by the KMAS beneficiaries:

The Table No. 2 depicts the usefulness of KMAS and it can be interpreted from the table that the respondents found subject home science as not useful with maximum mps 81.67%, followed by others subject as not useful with second highest mps 69.16%, animal husbandry (68.33%) as not useful, horticultural crop production and horticultural crop protection as useful (mps=63.33%), crop production as useful (mps=60.83%) and crop protection as most useful (mps=60.00%).

**Table.1** Distribution of the respondents according to various information needs of the beneficiaries of KMAS

| S. No. | Need of KMAS | Most Needful | | Needful | | Not needful | | MPS | Rank |
|---|---|---|---|---|---|---|---|---|---|
| | | F | % | F | % | F | % | | |
| **A.** | **Agronomy** | | | | | | | | |
| 1 | Seed Treatment | 45 | 37.5 | 43 | 35.83 | 32 | 26.67 | 55.41 | VIII |
| 2 | Sowing time | 5 | 4.17 | 41 | 34.17 | 74 | 61.67 | 21.25 | XIX |
| 3 | Land Preparation | 17 | 14.17 | 59 | 49.17 | 44 | 36.67 | 38.75 | XIII |
| 4 | Nutrient Management | 67 | 55.83 | 49 | 40.83 | 4 | 3.33 | 76.25 | IV |
| 5 | Weed Management | 89 | 74.17 | 27 | 22.5 | 4 | 3.33 | 85.42 | II |
| 6 | Seed rate | 4 | 3.33 | 50 | 41.67 | 66 | 55 | 24.17 | XVIII |
| 7 | Variety | 60 | 50 | 52 | 43.33 | 8 | 6.67 | 71.67 | VI |
| 8 | Storage | 16 | 13.33 | 62 | 51.67 | 42 | 35 | 39.17 | XII |
| **B.** | **Soil Science** | | | | | | | | |
| 1 | Soil Management | 5 | 4.17 | 54 | 45 | 61 | 50.83 | 26.66 | XVI |
| 2 | Water management | 5 | 4.17 | 53 | 44.17 | 51 | 42.5 | 48.33 | IX |
| 3 | Soil test | 15 | 12.5 | 56 | 46.67 | 49 | 40.83 | 35.83 | XIV |
| **C** | **Plant Protection** | | | | | | | | |
| 1 | Insect management | 97 | 80.83 | 22 | 18.33 | 1 | 0.83 | 90.00 | I |
| 2 | Disease Management | 83 | 69.17 | 35 | 29.17 | 2 | 1.67 | 83.75 | III |
| 3 | Information of Resistant varieties | 44 | 36.67 | 54 | 45 | 22 | 18.33 | 59.16 | VII |
| **D.** | **Organic Farming** | 31 | 25.83 | 53 | 44.17 | 36 | 30 | 47.92 | X |
| **E.** | **Ag. Implement** | 19 | 15.83 | 58 | 48.33 | 43 | 35.83 | 40 | XI |
| **F.** | **Ag. Marketing** | 23 | 19.17 | 39 | 32.5 | 58 | 48.33 | 35.42 | XV |
| **G.** | **Scheme /Subsidies** | 66 | 55 | 41 | 34.17 | 13 | 10.83 | 72.08 | V |
| **H.** | **Horticulture** | | | | | | | | |
| 1 | Nursery | 17 | 14.17 | 12 | 10 | 91 | 75.83 | 19.17 | XXII |
| 2 | Seed Treatment | 4 | 3.33 | 13 | 10.83 | 103 | 85.83 | 8.75 | XXVII |
| 3 | Insect management | 17 | 14.17 | 13 | 10.83 | 90 | 75 | 19.58 | XXI |
| 4 | Disease Management | 16 | 13.33 | 15 | 12.5 | 89 | 74.17 | 19.59 | XX |
| 5 | Nutrient Management | 10 | 8.33 | 17 | 14.17 | 93 | 77.5 | 15.41 | XXIII |
| 6 | Water management | 9 | 7.5 | 18 | 15 | 93 | 77.5 | 15 | XXIV |
| **I.** | **Animal husbandry** | | | | | | | | |
| 1 | Dairy | 20 | 16.67 | 21 | 17.5 | 79 | 65.83 | 25.41 | XVII |
| 2 | Poultry | 8 | 6.67 | 6 | 5 | 106 | 88.33 | 9.17 | XXVI |
| 3 | Fishery | 1 | 0.83 | 2 | 1.67 | 117 | 97.5 | 1.66 | XXIX |
| **J.** | **Home Science** | | | | | | | | |
| 1 | Nutrition | 0 | 0 | 3 | 2.5 | 117 | 97.5 | 1.25 | XXX |
| 2 | Value Addition | 0 | 0 | 2 | 1.67 | 118 | 98.33 | 2 | XXVIII |
| 3 | Mushroom Production | 5 | 4.17 | 13 | 10.83 | 102 | 85 | 9.58 | XXV |

**Table.2** Distribution of the respondents according to the usefulness of the message as perceived by the KMAS beneficiaries

| S.No. | Particulars | | Level of usefulness | | |
|---|---|---|---|---|---|
| | **Subject** | **Sub area** | **Most useful (F/%)** | **Useful (F/ %)** | **Not useful (F/%)** |
| 1 | Crop production | Seeds & varieties | 43(35.83) | 75(62.50) | 2(1.67) |
| | | Fertilizer & manure | 36(30.00) | 79(65.83) | 5(4.17) |
| | | Intercultural operations | 49(40.83) | 67(55.83) | 4(3.34) |
| | | Harvesting & storage | 44(36.67) | 71(59.16) | 5(4.17) |
| | | Mean (MPS) | 43(35.84) | 73(60.83) | 4(3.33) |
| 2 | Crop protection | Insect management | 92(76.66) | 27(22.50) | 1(0.84) |
| | | Disease management | 79(65.83) | 38(31.67) | 3(2.50) |
| | | Weed management | 45(37.50) | 70(58.33) | 5(4.17) |
| | | Mean (MPS) | 72(60.00) | 45(37.50) | 3(2.50) |
| 3 | Horticultural crop production | Seeds & varieties | 7(5.83) | 82(68.33) | 31(25.84) |
| | | Fertilizer & manure | 5(4.17) | 83(69.16) | 32(26.67) |
| | | Intercultural operations | 3(2.50) | 65(54.17) | 52(43.33) |
| | | Harvesting & storage | 5(4.17) | 74(61.67) | 41(34.16) |
| | | Mean (MPS) | 5(4.17) | 76(63.33) | 39(32.50) |
| 4 | Horticultural crop protection | Insect management | 12(10.00) | 84(70.00) | 24(20.00) |
| | | Disease management | 5(4.17) | 77(64.17) | 38(31.66) |
| | | Weed management | 4(3.33) | 67(55.83) | 49(40.84) |
| | | Mean (MPS) | 7(5.83) | 76(63.33) | 37(30.84) |
| 5 | Animal husbandry | Dairy | 3(2.50) | 53(44.17) | 64(53.33) |
| | | Poultry | 1(0.84) | 32(26.66) | 87(72.50) |
| | | Fisheries | 2(1.67) | 23(19.17) | 95(79.16) |
| | | Mean (MPS) | 2(1.67) | 36(30.00) | 82(68.33) |
| 6 | Home Science | Value addition | 5(4.17) | 12(10.00) | 103(85.83) |
| | | Mushroom cultivation | 14(11.67) | 17(14.16) | 89(74.17) |
| | | Food & nutrition | 8(6.67) | 10(8.33) | 102(85.00) |
| | | Mean (MPS) | 9(7.50) | 13(10.83) | 98(81.67) |
| 7 | Others | Govt. Schemes & subsidy | 7(5.83) | 38(31.67) | 75(62.50) |
| | | Extension activities | 6(5.00) | 31(25.84) | 83(69.16) |
| | | Marketing information | 2(1.67) | 27(22.50) | 91(75.83) |
| | | Mean (MPS) | 5(4.17) | 32(26.67) | 83(69.16) |

**Table.3** Usefulness of the contents of message as perceived by the KMAS beneficiaries

| S.No. | Particulars | | Usefulness of the message | | |
|---|---|---|---|---|---|
| | **Subject** | **Sub area** | **Usefulness score** | **Usefulness index** | **Rank** |
| 1 | Crop production | Seeds & varieties | 161 | 67.08 | IV |
| | | Fertilizer & manure | 151 | 62.91 | VII |
| | | Intercultural operations | 165 | 68.75 | III |
| | | Harvesting & storage | 159 | 66.25 | VI |
| 2 | Crop protection | Insect management | 211 | 87.91 | I |
| | | Disease management | 196 | 81.66 | II |
| | | Weed management | 160 | 66.66 | V |
| 3 | Horticultural crop production | Seeds & varieties | 96 | 40.00 | IX |
| | | Fertilizer & manure | 93 | 38.75 | X |
| | | Intercultural operations | 71 | 29.58 | XIV |
| | | Harvesting & storage | 84 | 35.00 | XII |
| 4 | Horticultural crop protection | Insect management | 108 | 45.00 | VIII |
| | | Disease management | 87 | 36.25 | XI |
| | | Weed management | 75 | 31.25 | XIII |
| 5 | Animal husbandry | Dairy | 59 | 24.58 | XV |
| | | Poultry | 34 | 14.16 | XIX |
| | | Fisheries | 27 | 11.25 | XXI |
| 6 | Home Science | Value addition | 22 | 9.16 | XXIII |
| | | Mushroom cultivation | 45 | 18.75 | XVII |
| | | Food & nutrition | 26 | 10.83 | XXII |
| 7 | Others | Govt. Schemes & subsidy | 52 | 21.66 | XVI |
| | | Extension activities | 43 | 17.91 | XVIII |
| | | Marketing information | 31 | 12.91 | XX |

**Table.4** Distribution of the respondents according to overall usefulness of KMAS

| S.No. | Level of usefulness | Frequency | Percentage |
|---|---|---|---|
| 1 | Low (<3.02) | 30 | 25.00 |
| 2 | Medium (3.02-7.60) | 69 | 57.50 |
| 3 | High (>7.60) | 21 | 17.50 |
| | Total | 120 | 100.00 |

The Table No.3 shows the result on usefulness of the contents of message as perceived by the KMAS beneficiaries and it can be observed from the table that insect management in agronomic crop holds rank first with 87.91% usefulness index, followed by disease management in agronomic crop with rank II and 81.66% usefulness index, intercultural operations in crop production with III rank and 68.75% usefulness index, seeds & varieties in crop production with IV rank and 67.08% usefulness index, weed management in crop production with V rank and 66.66% usefulness index, harvesting & storage in crop production with VI rank and 66.25% usefulness index and fertilizer & manure in crop production with VII rank with 62.91% usefulness index.

## Overall usefulness of KMAS:

The Table No.4 shows that higher percentage of the respondents (57.50%) found the KMAS of medium overall usefulness, followed by 25.00 per cent respondents having low overall utility and 17.50 per cent of respondents were having high overall utility. The similar results were also reported Kanavi(2014) and Sandhu *et al.*, (2016).

It is concluded that, information needs on subject of KMAS showed that majority of the respondents agreed that information on insect management was most needful and with regards to number of SMS sent pertaining to different discipline, maximum number of messages were send for agronomy (crop production).

Usefulness of the message as perceived by the KMAS beneficiaries, majority of farmers accepted that the subject area increases farm yield to be useful. Analysis on overall usefulness showed that more than half of the respondents lied in the medium overall usefulness category.

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