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Research Article

ICT INTERVENTION IN DELIVERY OF ADVISORY SERVICES DURING PANDEMIC OF COVID-19: A CASE STUDY

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Received: May 25, 2020; Revised: June 11, 2020; Accepted: June 12, 2020; Published: June 15, 2020

Abstract: The study revealed that the use of ICT interventions that include WhatsApp group, Facebook page, Website of the KVK, You tube channel, Personal phone calls, Radio talk, Tv talk, Text message, This research not only explores the exiting status of ICT interventions to deliver the advisory services during Corona period but also suggested the ways of digital world of the twenty first century specially the agriculture sector.

Keywords: COVID-19, Coronavirus, Pandemic, KVK, ICT intervention

Citation: Singh R.K., *et al.*, (2020) ICT Intervention in Delivery of Advisory Services during Pandemic of COVID-19: A Case Study. International Journal of Agriculture Sciences, ISSN: 0975-3710 & E-ISSN: 0975-9107, Volume 12, Issue 11, pp.- 9936-9939.

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Academic Editor / Reviewer: Dr Brijesh Kumar Ojha

Introduction

Recently, a deadly virus known as novel coronavirus (COVID-19) has grabbed all people's attention from all over the world. Considering its global spread and deadly consequences, on 11th March 2020, the World Health Organization (WHO) declared COVID-19 as a pandemic. The first victim of this virus was diagnosed in China in December 2019 in the city of Wuhan [1]. Between December 2019 and 4th April 2020, 82,875 cases and 3,335 deaths were confirmed and by the 6th April 77,078 recoveries were reported in China. The infectious disease has spread to Italy, Spain, the United States of America, and Canada, Iran, India and rest of the world, causing the deaths of thousands of people. There are three main ways of preventing any contagious disease. These include: practicing personal hygiene, stopping transmission through social distancing, and immunization [2]. Due to the lack of vaccines and drugs, preventing the transmission of coronavirus became the primary goal of many national and international public health policies [3]. There is disruption in supply chains because of transportation problems and other issues. Media reports show that the closures of hotels, restaurants, sweet shops, and tea shops during the lockdown is already depressing milk sales. Meanwhile, poultry farmers have been badly hit due to information, particularly on social media, that chicken are the carriers of COVID-19. India has also introduced a number of Mobile apps like Arogya setu to identify the corona patient and kisan rath to facilitate the farmers in buying and selling of their produce with transportation facilities due to lockdown in the country as a whole. After taking the initiative of lockdown in the country the Mahayogi Gorakhnath Krishi Vigyan Kendra, Gorakhpur serves as a storehouse of scientific knowledge by using different ICTs tool that is useful to farmers in all angels of their livelihood. Because of the pick time of harvesting of rabi season crop, KVK regularly approach the farmer through social media like Whatsapp group named "Krishak Mobile Sandesh" Facebook page and Youtube Channel of the KVK. The scientists of KVK also advised the farmers through personal phone call, audio and video conferencing, radio and tv talk and also with the support of different platform of

public and private sector of the district. Hence, in this study an attempt was made to delineate the role of KVK in the delivery of agricultural information by the use of Information Communication Technologies during the spread of COVID-19 pandemic.

Material and Methods

The present study entitled "ICT Intervention in delivery of advisory services during pandemic of COVID-19: A Case study" undertaken during the agricultural year 2019-20. An Ex-Post Facto research design used for the present investigation. The Mahayogi Gorakhnath Krishi Vigyan Kendra, which is working under Goraksh Nath Sewa Sansthan was taken for case study regarding delivery of advisory services for comparative analysis of before and during pandemic of Coronavirus through ICT intervention because of lockdown in the country. The study adopted a quantitative research approach and the author working as Scientist/SMS- Agril. Extension in the KVK himself collected the data of advisory services delivered by KVK for study. For comparative investigation of ICT intervention, the data of advisory services delivered by KVK between 24 March to 24 April (30 day) for before the pandemic and 25 April to 22 April (30 day) during pandemic of COVID-19 collected with the help of Office (Programme Assistant- Computer) of the Krishi Vigyan Kendra. Analysis was done by using relevant statistical techniques like use of percentage increase, mean *etc* [4-8].

Result and Discussion

The findings and inferences drawn in respect to the specific objectives of the study was done on the basis of analysis of ICT Intervention for delivery of advisory services before and during Corona virus pandemic by using relevant statistical techniques. The findings of this study have been divided and discussed into following subhead.

Table-1 Subject area wise advisory services delivered by KVK through effective use of Information communication technologies

SN	Subject Area	No. of Advisory Disseminated		Percentage increase in number of advisory disseminated	No. of Farmers Benefitted		Percentage increase in number of farmers benefitted	Rank Order (On the basis of percentage increase in no. of Farmers benefitted)
		Before COVID-19 pandemic	During COVID-19 pandemic		Before COVID-19 pandemic	During COVID-19 pandemic		
1	Seed / Crop production	21	57	171.43	303	1003	231.02	III
2	Mobile apps related to Covid-19 (Arogya Setu App, Kisan rath, e-NAM)	16	1037	6381.25	274	3083	1025.18	I
3	Insect, Pest and Disease management	18	41	127.78	437	843	92.9	XII
4	Seed / Plant sapling	6	25	316.67	243	431	77.36	XIII
5	Post-Harvest management	14	53	278.57	356	1210	239.88	II
6	Integrated Nutrient Management	11	38	245.45	209	620	196.65	IV
7	Soil Testing	7	37	428.57	324	744	129.62	IX
8	Kitchen Garden	4	16	300	197	569	188.83	V
9	Animal/Goat/Sheep/ Poultry health and their disease management	16	49	206.25	463	1203	159.82	VI
10	Bee keeping	13	21	61.54	398	688	72.86	XIV
11	Juggary Production their processing and packaging	15	29	93.33	403	536	33	XV
12	Vegetables / Fruits / Flower cultivation	18	33	83.33	765	934	22.09	XVI
13	Organic Farming	8	12	50	402	436	8.45	XVII
14	Crop residue management	20	62	210	787	1961	149.17	VIII
15	Transportation and marketing issues	2	17	750	176	397	125.56	X
16	Mushroom Production	3	13	333.33	206	399	93.68	XI
17	Weather related information	7	19	171.43	376	968	157.44	VII
Total		199	1559	600.53%	6319	16025	176.68%	

Note: Message delivered through television/radio/press coverage/audio message in mass not included because of uncountable in nature

Table-2 ICT tools used by KVK for delivery of advisory services

SN	ICT Tools	No. of Times ICT tools used		Rank Order (On the basis of no. of times ICT tools used during COVID-19 pandemic)
		Before COVID-19 pandemic	During COVID-19 pandemic	
1	Personal call/Phone Call	79	537	II
2	Video Conferencing	1	7	XII
3	Text Message	0	35	VI
4	Voice Message	8	49	III
5	Audio Conferencing	0	21	VII
6	Radio talk	0	2	XIII
7	Tv talk	3	10	IX
8	Whatsapp group/Personal Whatsapp	107	832	I
9	Facebook page	18	42	IV
10	Youtube Channel	1	9	X
11	Farm magazine/Literature/Folder etc.	7	8	XI
12	Website of the KVK	21	37	V
13	News Paper Coverage/Press Coverage	5	17	VIII
Total		246	1603	

The data furnished in [Table-1] indicates that the advisory services disseminated by KVK was categorized into two categories i.e. before and during the pandemic of Covid-19. In case of before the pandemic of Coronavirus there were 21 advisory services delivered through which, 303 farmers benefitted related to seed and crop production by the collective efforts of the scientists of KVK followed by crop residue management for which, 20 advisory services delivered and 787 farmers were benefitted, 18 advisory were delivered related to Vegetables/Fruits/Flower cultivation and 765 farmers benefitted, 18 advisory were also delivered about Insect, Pest and Disease management and 437 farmers benefitted, Mobile apps related to Covid-19 (Arogya Setu App, Kisan rath, e-NAM etc.) 16 advisory were delivered and 274 farmers benefitted and 14 advisory were delivered and 274 farmers benefitted about Post-Harvest management practices, respectively. Against this, in case of during the pandemic of Coronavirus 1037 advisory services were released regarding the information on Mobile apps related to Covid-19 (Arogya Setu App, Kisan rath, e-NAM etc.) by KVK and for which, 3083 farmers were benefitted followed by 62 advisory delivered on crop residue management and 1961 farmers were benefitted, 57 advisory delivered on crop/seed production and 1003 farmers were benefitted and 49 advisory delivered on Animal/Goat/Sheep/ Poultry health and their disease management for which 1203 farmers were benefitted, respectively.

The study also exposes the percentage increase in the number of farmers benefitted from before to the time of coronavirus pandemic through the effective

use of ICTs on different subject area wise by the KVK. The result shows that Mobile apps related to Covid-19 (Arogya Setu App, Kisan rath, e-NAM etc.) got rank 1st with a total 1025.18% increase in number of farmers benefitted by KVK during Coronavirus pandemic. The percentage increase in the total number of benefitted farmers at the time of coronavirus pandemic on different subject area wise which taken under study were describing in descending order viz. Post-Harvest management with 239.88% got rank IInd, Seed/Crop production with 231.02% got rank IIIrd, Integrated Nutrient Management with 196.65% got rank IVth, Kitchen Garden with 188.83% got rank Vth, Animal/Goat/Sheep/Poultry health and their disease management with 159.82 got rank VIth, Weather related information with 157.44% got rank VIIth, Crop residue management with 149.17% got rank VIIIth, Soil Testing with 129.62% got rank IXth, Transportation and marketing issues with 125.56% got rank Xth and so on, respectively.

The study reported that a total number of 1559 subject area wise advisory were released by KVK by using ICTs and for that 16025 farmers benefitted during the pandemic of Coronavirus in comparison to 199 advisory services and 6319 farmers benefitted before the pandemic. The findings of this ongoing study reveal that multidisciplinary scientist of the Krishi Vigyan Kendra by the effective use of ICT interventions are playing a significant role in the delivery of agricultural information during pandemic of COVID-19. The table shows a magical percentage increase in the numbers of farmers about advisory released for Mobile apps related to Covid-19 (Arogya Setu App, Kisan rath, e-NAM etc.) because of zonal

headquarter of KVKs i.e. named ATARI, Kanpur has strictly recommended to not only aware the farmers but to ensure to download the Arogya Setu and Kisan rath apps that specially made corona period for protecting the farmers to the infection of Coronavirus and also short out their transportation and marketing related issues. For easily understanding the advisory services delivered by KVK subject area wise data represented below in the form of graph.

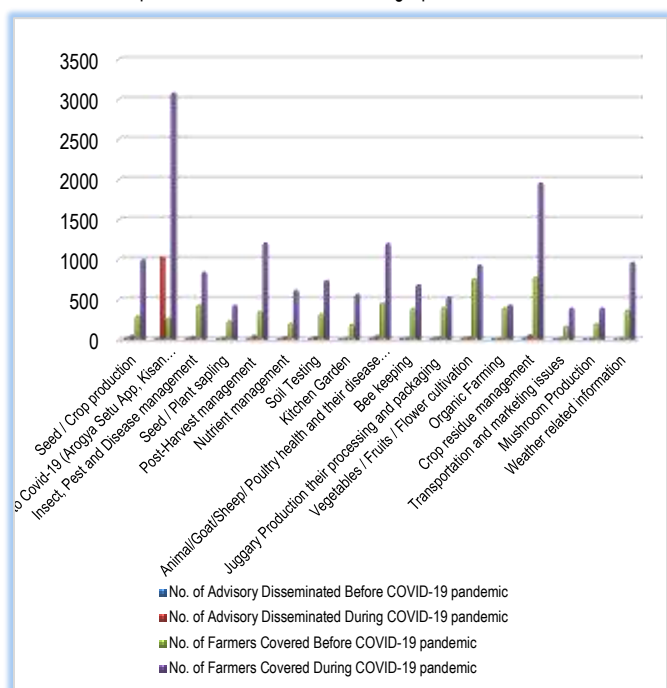


Fig-1 Subject area wise advisory services delivered by KVK through effective use of ICTs

The [Table-2] show the ICT intervention used by KVK for delivery of advisory services category wise before and during Coronavirus pandemic. In case of before the pandemic there were 107 advisory services deliver to the farmers through Whatsapp group/Personal Whatsapp by joint efforts of scientists of Krishi Vigyan Kendra followed by Personal call/Phone call (79), Website of KVK (21), Facebook page (18), Farm magazine/Literature/Folder etc. (7), News Paper Coverage/Press Coverage (5), Tv talk (3) and You tube channel and Video Conferencing used equal time (1), respectively.

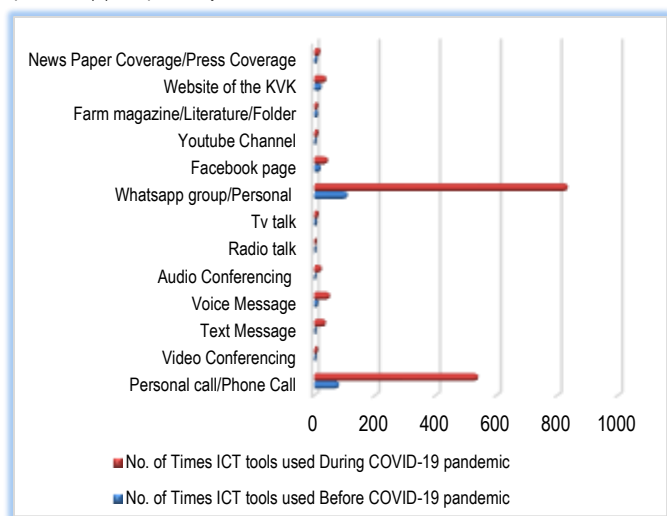


Fig-2 ICT tools used by KVK for delivery of advisory services

In case of during the pandemic Whatsapp group/Personal Whatsapp were much more time (832) used for advisory services and got rank first followed by Personal call/Phone Call (537) 1st, Voice Message (49) 3rd, Facebook page (42) 4th, Website of the KVK (42) 5th, Text Message (35) 6th, Audio Conferencing (21) 7th, News Paper Coverage/Press Coverage (17) 8th, Tv talk (10) 9th, Youtube

Channel (9) 10th, Farm magazine/Literature/Folder (8) 11th, Video Conferencing (7) 12th and Radio talk (2) 13th, respectively.

The finding of the study analyzed that during the pandemic of Corona virus ICT intervention used much more time for delivery of agricultural information by the KVK in comparison to before the pandemic. A deeper Probe into the study revealed that Whatsapp group of KVK i.e. named "Krishak Mobile Sandesh" played a magnificent role in the delivery of advisory services in time. Similar finding was reported by the researcher in support of the study [5].

Conclusion

The study reported that a total increase number of 16025 famers benefitted by KVK via ICT intervention during the pandemic of Coronavirus in comparison to 1559 farmers benefitted before the pandemic. On the basis of the above fact it may be told that KVK has more concentrated on ICTs during Coronavirus pandemic for awareness and short out the problems of farmers due to lockdown in the country. Based on the findings of the study it may also conclude that WhatsApp group and personal call was the main intervention of ICTs in the delivery of advisory services to the farmers as well as solving their problems. The most of the ICT intervention taken under study can be handle only by using different platform of mobile phone. Thus, farmers need to be trained about overall functioning of mobile phone was also an important indirect observance of the researcher. However, to the best of our knowledge, no academic research or studies is conducted focusing to the ICT interventions in the delivery of advisory services during COVID-19 pandemic.

Application of research: The outcome of this research would contribute as an eye opener to the researcher, practitioners and government to take necessary further initiatives to deploy and develop such ICT or digital interventions to not only aware the farmers but to combat with the pandemic spread of novel Coronavirus.

Research Category: Agriculture Extension

Acknowledgement / Funding: Authors are thankful to ICAR-Mahayogi Gorakhnath Krishi Vigyan Kendra, Peppaganj, Chauk Mafi, 273165, Uttar Pradesh, India

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Research project name or number: Research station study

Author Contributions: All authors equally contributed

Author statement: All authors read, reviewed, agreed and approved the final manuscript. Note-All authors agreed that- Written informed consent was obtained from all participants prior to publish / enrolment

Study area / Sample Collection: ICAR-Mahayogi Gorakhnath Krishi Vigyan Kendra, Peppaganj, Chauk Mafi, 273165

Cultivar / Variety / Breed name: Nil

Conflict of Interest: None declared

Ethical approval: This article does not contain any studies with human participants or animals performed by any of the authors.
Ethical Committee Approval Number: Nil

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