Impact of Information and Communication Technology in Agriculture – Perception of the Farmers in Ramanathapuram District

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Research Article

Abstract: Agriculture is one of the most important sectors in India, and could benefit tremendously with the applications of ICTs especially in bringing changes to socio-economic conditions of poor in backward areas. The common problems in adoption of ICT in rural segments are ICT illiteracy, availability of relevant and localized contents in their own languages, easy and affordable accessibility and other issues such as awareness and willingness for adoption of new technologies among the rural peoples etc. With this background information, the paper is devoted to outline the level of attitudes of the farmers on ICT application in agriculture, impact of ICT application in agriculture activities and problems in accessing the ICT application in Ramanathapuram district. the Indian Govt is being made a remarkable achievements especially in the area of agriculture by giving various facilities to the farmers in which the ICT services is one among which is helping the farmers to understand the modern cultivation methods, availability of agriculture inputs, irrigational sources, availability of pesticide and fertilizers for increasing the production and productivity of crops. India is a developing economic country where agriculture forms the backbone of Indian economy. Despite concentration of industrialization, agriculture remains in a place of pride. For a long period of time, Indian rural communities especially farmers have been facing number of socio-economic problems. So various planners and administrators of the agriculture dept of the government must consider the threats faced by farmers to protect their interest as well as the interest of the nation.

Key words: Agriculture: information, communication and technology: Agriculture: Level of Attitudes.

Introduction

Agriculture is one of the most important sectors in India, and could benefit tremendously with the applications of ICTs especially in bringing changes to socio-economic conditions of poor in backward areas. Agriculture constitutes a major livelihoods sector and most of the rural poor depend on rain-fed agriculture and fragile forests for their livelihoods. Farmers in rural areas have to deal with failed crops and animal illness frequently and due to limited communication facilities, solutions to their problems remain out of reach (World Bank, 2009). The service role of ICTs can enhance rural communities' opportunities by improving their access to market information and lower transaction costs for poor farmers and traders. Though India has a strong and fast growing IT industry, access to ICTs remains very low particularly in rural areas. The present indicators of IT penetration in Indian society are far from satisfactory. The National Policy for Farmers emphasizes the use of Information and Communication Technology (ICT) at village level for reaching out to the farmers with the correct advisories and requisite information. The available satellite data relating to weather news, long-term and short-term weather forecast, production information, market prices policy developments pertaining to agriculture, apart from the number of advisory services in public or private domain that disseminate information should be utilized adequately. The common problems in adoption of ICT in rural segments are ICT illiteracy, availability of relevant and localized contents in their own languages, easy and affordable accessibility and other issues such as awareness and willingness for adoption of new technologies among the rural peoples etc. With this background information, the paper is devoted to outline the level of attitudes of the farmers on ICT application in agriculture, impact of ICT application in agriculture activities and problems in accessing the ICT application in Ramanathapuram district.

Statement of the Problem

In the agriculture sector here the farmers mostly stick on to tradition and traditional method of agriculture. Even though, science has gained importance and developed a lot, since most of the agriculturists are illiterate or some lacking in the awareness of technology and its change, there was not much influence of technology till late 1980's. But now thanks to mass media like T.V., mobile phone, radio and internet the benefits of technology in agriculture are known by the people. Hence, there is a need to study the nature of the problem. It attempts to analyze the role of ICT and its impact on production and marketing of various agriculture crops with special reference to Ramanathapuram district of Tamil Nadu.

Ramanathapuram district is one of the most important districts of Tamil Nadu where there are large number of people depend agricultural as a main occupation for their survival. The main food crop in the district is paddy, chilly and cotton. The total number of

cultivators and agricultural labourers of according to the census 2001 were 1, 79,562 and 1, 24,483 respectively. The total irrigated area was 2, 08,790 hectares of which the areas irrigated by tanks and wells were 7,861 hectares and 2,307.95 hectares respectively. R.S. Mangalam block was the major area of irrigation i.e., 4,857 hectares irrigated by Tanks and 437.64 hectares irrigated by wells. The total geographical area of the district was 3,889.62 sq. km. of which cropped area accounts for about 53.68 per cent of the total area. Paddy is the major food crop of the district. About 46 per cent of the total areas sown are paddy followed by chilies, groundnut and cotton. Paddy grown on wet lands irrigated by rivers, canals, tanks and wells. Cumbu, Cholam, Ragi, Varagu, Samai and Kudiravali are the millets produced in the district. Ragi is grown in a wide range of varying soil fertility during the periods, May-June and November-January. In East Ramanathapuram district, cotton has been introduced as an irrigated crop in summer. Large areas have been brought under improved varieties of cotton. The Ramanathapuram district is one of the chief cotton producing areas in the State, besides Coimbatore and Tirunelveli. This may be the main reason for selecting this district for the present study.

Hence, the proposed research aims to study the past and present major ICT initiatives in agriculture in the study area, the utilisation, the factors influencing the level of awareness and benefits availing form ICT application in agriculture. In this context, the present study "Role of Information Communication and Technology in Agriculture – Perception of the Farmers in Ramanathapuram District" is taken up to make a close probe in to the role of ICT on agricultural development especially among the land holding classes in Ramanathapuram district.

Objectives

The objectives of the study are

With this background information, the paper is devoted to outline the level of attitudes of the farmers on ICT application in agriculture, impact of ICT application in agriculture activities and problems in accessing the ICT application in Ramanathapuram district

1. To outline the level of attitudes of the farmers on ICT application in agriculture in the study area
2. To study the opinion of the farmers on the impact of ICT application in agriculture activities
3. To analyse the opinion of farmers on the problems in accessing the ICT application in Ramanathapuram district

Methodology

In the present study the researcher has collected and used primary data. Using an interview schedule, the primary data was collected about level of awareness, factors influencing awareness, extent of utilization; benefits availed and impact of ICT application in agriculture on socio economic conditions of the farmers of Ramanathapuram district.

Sampling Design

According to statistics, Ramanathapuram District comprises seven taluks and eleven blocks with 400 revenue villages where the total cultivators were 179,562. In all the seven taluk except Rameswaram the agriculture is the major occupation in the district. Hence the convenient simple random sampling technique has been adopted for the present study with Ramanathapuram District as universe. Since the total revenue villages of the district and the total cultivators are numerous, the researcher has randomly selected only 50 villages where agriculture is major occupation and having two seasons of cropping pattern. Out of the 50 select villages, the researcher has selected 6 farmers consisting of each 2 from small, medium and large farmers thus total of 300 farmers were selected based on convenient of the researcher. However the researcher took care to ensure that the sample represented the whole area of Ramanathapuram district.

Period of the Study

In order to collect the primary data regarding role of information and communication technology on production and marketing of agriculture crops in Ramanathapuram district, the survey was conducted from January 2011 to June 2011 with the help of pre designed interview schedule.

Major Findings of The Study

It is evident from the table 1 it is stated out of 300 respondents selected, all the respondents were aware of ICT application in agriculture.

Level of Attitude towards ICT application in Agriculture

In order to analyze the perceptions of the sample customer, they were asked to respond to 10 different statement on farmer's attitudes using Likert's Five Point Scale with the following scale: Highly satisfied (5) Satisfied (4) Neither Satisfied Nor Dissatisfied (3) Dissatisfied (2) and Highly Dissatisfied (1). On the basis of the perception score, mean and rank have been calculated for each statement for the purpose of analysis. The level of attitude of the farmers towards ICT application in Agriculture is shown in Table 1.

Table 1: Opinion on Level of Attitude towards ICT Application in Agriculture

Sl. No.	*Statement*	*No. of Farmers*					*Total score*	*Mean score*	*Rank*
		HA	*A*	*NAD*	*DA*	*HDA*			
1.	ICT application in Agriculture is a cheap sources of information to the farmers	175	488	87	192	18	960	3.20	2
2.	ICT application in Agriculture has made farmers into knowledgeable	230	256	273	118	40	917	3.06	3
3.	ICT application in Agriculture fulfills the various needs of the farmers	200	300	219	164	30	913	3.04	4
4.	ICT application in Agriculture has created a new technology in agriculture production	250	212	195	144	60	861	2.87	7
5.	ICT application in Agriculture is need based rather than money based	345	360	129	134	31	999	3.33	1
6.	ICT application in Agriculture has changed the concept of traditional method of agriculture	245	268	213	140	43	909	3.03	5
7.	ICT application in Agriculture has created agri related wealth of farmers	190	264	216	138	55	863	2.88	6
8.	ICT application in Agriculture has improved the economic status of the farmers	150	288	183	170	52	843	2.81	8
9.	ICT application in Agriculture has improved the social status of the farmers	175	224	210	142	68	819	2.73	9
10.	ICT application in Agriculture has created employment opportunities	160	200	228	174	55	817	2.72	10

Source: Primary Data.
(HA: Highly Agreed, A: Agreed, NSD: Neither Satisfied nor Satisfied, DS: Dissatisfied, HDS: Highly Dissatisfied)

From Table 1 it is seen that on the first statement, "ICT application in Agriculture is a cheap sources of information to the farmers" out of the 300 farmers, 192 (64.00%) have a positive attitude, while 132 (44.00%) have a negative attitude. The intensity value comes to 60 and it places the statement at the second rank. It is evident that on the second statement, "ICT application in Agriculture has made farmers into knowledgeable", out of the 300 farmers, 156 (52.00%) agreed with the statement and 139 (46.33%) did not. The intensity value comes to 17 and it places the statement at the third rank. It is clear that on the third statement, "ICT application in Agriculture fulfills the various needs of the farmers" out of the 300 farmers, 155 (51.67%) agreed with the statement and 142 (47.33%) did not. The intensity value comes to 13 and it places the statement at the fourth place.It is learnt that on the fourth statement, "ICT application in Agriculture has created a new technology in agriculture production" out of the 300 farmers, 153 (51.00%) are in agreement with it, while 192 (64.00%) are not. The intensity value at is -39 and it places the statement at the seventh place. It is observed that on the fifth statement, "ICT application in Agriculture is need based rather than money based" out of the 300 farmers, 228 (76.00%) have positive attitude towards the statement, while 129 (43.00%) are negative. The intensity value arrived at is 99 and it places the statement at the first rank. It is noted that on the sixth statement "ICT application in Agriculture has changed the concept of traditional method of agriculture" out of the 300 farmers, 165 (55.00%) have a positive outlook, while 156 (52.00%) have a negative feeling. The intensity value arrived at is 9 and it places the statement at the fifth place. As for the seventh statement, "ICT application in Agriculture has created agri related wealth of farmers" out of the 300 farmers, 142 (47.33%) agreed with the statement and 179 (59.67%) did not. The intensity value arrived at is -37 and it places the statement at the sixth place. Considering the eighth statement, "ICT application in Agriculture has improved the economic status of the farmers", out of the 300 farmers, 132 (44.00%) have a positive outlook, while 189 (63.00%) are neutral. The intensity value comes to -57 and it places the statement at the eight positions. It is observed that on the ninth statement, "ICT application in Agriculture has improved the social status of the farmers", out of the 300 farmers, 126 (42.00%) have a positive attitude, while 207 (69.00%) have a negative attitude. The intensity value comes to -81 and it places the statement at the ninth place. It is evident that on the tenth statement, "ICT application in Agriculture has created employment opportunities", out of the 300 farmers, 114 (38.00%) agreed with the statement, 197 (65.67%) did not. The intensity value comes to -83 and it places the statement at the tenth place. On the basis of the attitude of the farmers towards ICT application in Agriculture, it may be concluded that ICT application in Agriculture has created a need based rather than money based information, ICT application in Agriculture is a cheap sources of information to the farmers and ICT application in Agriculture has made farmers into knowledgeable.

Impact of ICT Application in Agriculture

It is to be mentioned that the ICT offers a variety of programmes both for the social development and the economic development. An assessment of the impact was felt essential so as to determine whether there is any significant change on the part of the

farmers before and after their ICT application in Agriculture. It is to be noted that a change which a farmers does not possess before ICT application in Agriculture may take place in the farmers after his ICT application in Agriculture.

The researcher, through his observations and interaction with the farmers, has identified eight economic and social traits which the farmers may or may not posses before their ICT application in Agriculture. As such, the economic and social traits for the purpose of the study include productivity improved, avoiding buying on credit, comfortable life, reduction in poverty, house modified, liberal spending, change in the life style and maintenance of children improved.

Table 2 shows the distribution of the sample farmers based on their Improvement in Productivity before and after availing ICT application in Agriculture.

Table 2: Distribution of Farmers Based On Their Improvement in Productivity Before And After Farmers' ICT Application in Agriculture

Sl. No.	Before Availing ICT application in Agriculture	After Availing ICT application in Agriculture		Total
		No Improvement In Productivity	Improvement In Productivity	
		No. of Farmers		
1	Improvement In Productivity	33 (11.0)	85 (28.3)	118 (39.3)
2	No Improvement In Productivity	50 (16.7)	132 (44.0)	182 (60.7)
Total		83 (27.7)	217 (72.3)	300 (100.0)

Source: Primary Data

From Table 2 it is understood that out of the 300 farmers, 132 (44.0%) who had no improvement in productivity before availing ICT application in Agriculture had some improvement in productivity. Similarly 33 (11.0%) who had improvement in productivity before availing ICT application in Agriculture had no improvement in productivity after availing ICT application in Agriculture.

The distribution of the sample farmers based on the change in the production of crops before and after their availing ICT application in Agriculture is presented in Table 3.

Table 3: The Distribution of Farmers Based On Change in the Production of Crops Before And After ICT Application in Agriculture

Sl. No.	Before Availing ICT application in Agriculture	After Availing ICT application in Agriculture		Total
		No Change in the production of crops	Change in the production of crops	
		No. of Farmers		
1	Change in the production of crops	50 (16.7)	105 (35.0)	155 (51.7)
2	No Change in the production of crops	39 (13.0)	101 (33.7)	145 (48.3)
Total		89 (29.7)	206 (68.7)	300 (100.0)

Source: Primary Data

It is clear from Table 3 that out of the 300 farmers, 101 (33.7%) who had no change in the production of crops before availing ICT application in Agriculture, had some change in the production of crops after their availing ICT application in Agriculture. Similarly 50 (16.7%) farmers, who change in the production of crops, had no change in the production of crops after availing the ICT application in Agriculture under study.

Table 4 shows the distribution of the farmers based on their improvement in the knowledge of modern agriculture before and after their availing ICT application in Agriculture.

Table 4: Distributions of Farmers Based On Improvement in the Knowledge of Modern Agriculture before and after Their Availing ICT Application in Agriculture

Sl. No.	Before Availing ICT application in Agriculture	After Availing ICT application in Agriculture		Total
		No improvement in the knowledge of modern agriculture	improvement in the knowledge of modern agriculture	
		No. of Farmers		
1	improvement in the knowledge of modern agriculture	54 (18.0)	67 (22.3)	121 (40.3)
2	No improvement in the knowledge of modern agriculture	29 (9.7)	150 (50.0)	179 (59.7)
Total		83 (27.7)	217 (72.3)	300 (100.0)

Source: Primary data

It is seen from Table 4 that out of the 300 farmers, 150 (50.0%) who had no improvement in the knowledge of modern agriculture before availing ICT application in Agriculture, had led the improvement in the knowledge of modern agriculture after availing ICT application in Agriculture. Similarly 54 (18.0%) farmers, who had the improvement in the knowledge of modern agriculture before availing ICT application in Agriculture, had failed to lead improvement in the knowledge of modern agriculture after availing the ICT application in Agriculture under study.

The distribution of the farmers based on their reduction in poverty status before and after availing ICT application in Agriculture is shown in Table 5.

Table 5: Distribution of Farmers Based On Their Poverty Status before and After Availing ICT Application in Agriculture

Sl. No.	Before Availing ICT application in Agriculture	After Availing ICT application in Agriculture		Total
		No reduction in poverty status	Reduction in poverty status	
		No. of Farmers		
1	Reduction in poverty status	45 (15.0)	67 (22.3)	112 (37.3)
2	No reduction in poverty status	43 (14.3)	145 (48.3)	188 (62.7)
Total		88 (29.3)	212 (70.7)	300 (100.0)

Source: Primary Data

It is noted from Table 5 that out of the 300 farmers, 145 (48.3%) farmers who were not in a position of reduction of poverty status before availing ICT application in Agriculture, were in a position of reduction of poverty after availing ICT application in Agriculture. Similarly 45 (15.0%) farmers, who were in a position of reduction of poverty status before availing ICT application in Agriculture, were not in a position of reduction of poverty status after availing ICT application in Agriculture under study.

Table 6 shows the distribution of the farmers based on their response to change in the Improvement in the Agricultural wealth before and after their availing ICT application in Agriculture.

Table 6: Distribution of Farmers Based On Their Response to Change in the Improvement in the Agricultural Wealth before and After Availing ICT Application in Agriculture

Sl. No.	Before Availing ICT application in Agriculture	After Availing ICT application in Agriculture		Total
		Improvement in the Agricultural wealth	Improvement in the Agricultural wealth	
		No. of Farmers		
1	Improvement in the Agricultural wealth	45 (15.0)	82 (27.3)	127 (42.3)
2	Improvement in the Agricultural wealth	17 (5.7)	156 (52.0)	173 (57.7)
Total		62 (20.7)	238 (79.3)	300 (100.0)

Source: Primary Data.

It is understood from Table 6 that out of the 300 farmers, 156 (52.0%) who did not have their Improvement in the Agricultural wealth before availing ICT application in Agriculture, have Improvement in the Agricultural wealth after availing ICT application in Agriculture. It is to be noted that 45 (15.0%) who have Improvement in the Agricultural wealth before availing ICT application in Agriculture, did not Improvement in the Agricultural wealth after availing ICT application in Agriculture.

Table 7 presents the distribution of the farmers based on their response to liberal spending on agriculture before and after their availing ICT application in Agriculture.

Table 7: Distribution of Respondent Based On Their Response to Liberal Spending On Agriculture before and after Availing ICT Application in Agriculture

Sl. No.	Before Availing ICT application in Agriculture	After Availing ICT application in Agriculture		Total
		No Liberal Spending on agriculture	Liberal Spending on agriculture	
		No. of Farmers		
1	Liberal Spending on Agriculture	35 (11.7)	53 (17.7)	88 (29.3)
2	No Liberal Spending on Agriculture	81 (27.0)	131 (43.7)	212 (70.7)
Total		115 (38.3)	185 (61.7)	300 (100.0)

Source: Primary Data.

It is learnt from Table 7 that out of the 300 farmers, 131 (43.7%) who did not have liberal spending on agriculture before availing ICT application in Agriculture had liberal spending on agriculture after availing ICT application in Agriculture under study. However, 35(11.7%) who realized liberal spending on agriculture before availing ICT application in Agriculture, did not now realized it after availing ICT application in Agriculture.

Table 8 shows the distribution of farmers as regards in maintenance of cultivable lands and crops before and after their availing ICT application in Agriculture.

Table 8: Distribution of Farmers Based On the Improvement in Maintenance of Cultivable Lands and Crops before and After Their Availing ICT Application in Agriculture

Sl. No.	Before Availing ICT application in Agriculture	After Availing ICT application in Agriculture		Total
		No Improvement of maintenance of cultivable lands and crops	Improvement of maintenance of cultivable lands and crops	
		No. of Farmers		
1	Improvement of maintenance of cultivable lands and crops	27	96	123
		(9.0)	(32.0)	(41.0)
2	No Improvement of maintenance of cultivable lands and crops	45	132	177
		(15.0)	(44.0)	(59.0)
	Total	72	228	300
		(24.0)	(76.0)	(100.0)

Source: Primary Data

It is seen from Table 8 that out of the 306 farmers, 132(44.0%) who did not have any Improvement of maintenance of cultivable lands and crops before availing ICT application in Agriculture, did have Improvement of maintenance of cultivable lands and crops after their availing ICT application in Agriculture. Similarly 27 (9.0%) who had realised Improvement of maintenance of cultivable lands and crops before availing ICT application in Agriculture, did not have realised any Improvement of maintenance of cultivable lands and crops after availing ICT application in Agriculture.

Table 9 shows the distribution of farmers as regards in change in pesticide and fertiliser application before and after their availing ICT application in Agriculture.

Table 9: Distribution of Farmers Based On the Response to Change in Pesticide and Fertiliser Application before and after Their Availing ICT Application in Agriculture

Sl. No.	Before Availing ICT application in Agriculture	After Availing ICT application in Agriculture		Total
		No change in pesticide and fertiliser application	Change in pesticide and fertiliser application	
		No. of Farmers		
1	change in pesticide and fertiliser application	47	73	120
		(15.7)	(24.3)	(40.0)
2	No change in pesticide and fertiliser application	33	147	180
		(11.0)	(49.0)	(60.0)
	Total	80	220	300
		(26.7)	(73.3)	(100.0)

Source: Primary Data

It is learnt from Table 9 that out of the 300 farmers, 147(49.0%) who did not have change in pesticide and fertiliser application before availing ICT application in Agriculture, had some change in pesticide and fertiliser application after availing ICT application in Agriculture. 47 (15.7%) who had change in pesticide and fertiliser application before availing ICT application in Agriculture, had no change in pesticide and fertiliser application after availing ICT application in Agriculture under study.

Table 10 shows the distribution of farmers as regards in the improvement of agriculture produce marketing before and after their availing ICT application in Agriculture.

Table 10: Distribution of Farmers Based on the Response to Improvement of Agriculture Produce Marketing before and after Their Availing ICT Application in Agriculture

Sl. No.	Before Availing ICT application in Agriculture	After Availing ICT application in Agriculture		Total
		No improvement of agriculture produce marketing	improvement of agriculture produce marketing	
		No. of Farmers		
1	improvement of agriculture produce marketing	67(22.3)	71(23.7)	138(46.0)
2	No improvement of agriculture produce marketing	35(11.7)	127(42.3)	162(54.0)
	Total	102(34.0)	198(66.0)	300(100.0)

Source: Primary Data

It is learnt from Table 10 that out of the 300 farmers, 127(42.3%) who did not have improvement of agriculture produce marketing before availing ICT application in Agriculture, had some improvement of agriculture produce marketing after availing ICT application in Agriculture. 67 (22.3%) who had improvement of agriculture produce marketing before availing ICT application in Agriculture, had no improvement of agriculture produce marketing after availing ICT application in Agriculture under study.

Problem Associated With ICT Application in Agriculture

Though the farmers are well motivated and make strenuous efforts to make the various productivity activities, they face different problem in accessing ICT application in agriculture and running their agriculture activities. There problems faced by the farmers which were identified in the present study area by conducting pilot study which are presented below in table. The sample farmers were asked to rank the problems faced by them according to their priority preferences. The following formula has been used to convert the order of the preferences into ranks:

$$\text{Percent Position} = \frac{100(R_{ij} - 0.5)}{N_i}$$

R_{ij} = Rank given by the i^{th} factor, and

N_j = Number of factors ranked by the j^{th} individual

Thus the per cent position of each rank was obtained and it was converted into scores using the table given by Garrett. After that, the scores of all the respondents for each factor were added and then divided by the total number of members who have responded. The mean scores of each were arranged in descending order and corresponding ranks were allotted. The analysis on the problem of farmers in accessing ICT related information to agriculture is presented below in table 11.

Table 11: Opinion on Problem Associated with ICT application in Agriculture

Sl. No	Reasons	Ranks										Total score	Mean score	Rank
		1	2	3	4	5	6	7	8	9	10			
1	Inadequate availability of ICT services to rural farmers	17	16	8	15	36	51	35	40	59	23	1355	4.52	**9**
2	Lack of awareness towards ICT application on agriculture	15	13	20	38	33	18	54	59	34	16	1458	4.86	**7**
3	Market information on price, supply and demand adversely affect the price paid to the farmers	9	31	52	55	34	38	29	23	12	17	1790	5.97	**5**
4	Bias of private and Govt sector are having difficulty in delivering ICT based information to farmers	8	13	23	25	41	53	30	36	41	30	1407	4.69	**8**
5	Language of data /information provided by ICT media are not able to access	87	38	19	28	19	21	29	14	20	25	2002	6.67	**2**
6	Lack of Govt machinery to enlarge ICT application to rural areas	11	7	6	15	23	37	47	50	40	64	1131	3.77	**10**
7	Tendency of following traditional method of cultivation	77	70	27	31	33	21	10	15	10	6	2247	7.49	**1**
8	Domination of real estate business weaken agriculture activities	10	20	49	43	46	23	30	17	32	30	1629	5.43	**6**
9.	Poor rainfall and irrigation facilities make dispassionate to access ICT application on agriculture	42	40	60	41	27	24	17	17	12	20	1992	6.64	**3**
10	Lack of education of farmers make irresponsive to access ICT application on agriculture	23	66	49	37	21	16	23	24	20	21	1906	6.35	**4**

Source: Primary data

On the problem associated with ICT application in Agriculture, Table 11 shows that majority of farmers have opined that 'Tendency of following traditional method of cultivation ' is the major problem related with ICT application in Agriculture and since the mean score value shows highest i.e. 7.49 it is ranked in first place followed by 'Language of data /information provided by ICT media are not able to access' and 'Poor rainfall and irrigation facilities make dispassionate to access ICT application on agriculture' is another problem associated with availing ICT application in Agriculture and it is ranked in second and

third position and its mean score value shows 6.67 and 6.64 respectively. Similarly the problem such as 'Lack of education of farmers make irresponsive to access ICT application on agriculture', 'Market information on price, supply and demand adversely affect the price paid to the farmers and Domination of real estate business weaken agriculture activities are also one of the problems in availing ICT application in Agriculture and it is ranked in fourth, fifth and sixth rank respectively and its mean value shows 6.35, 5.97 and 5.43 respectively. Further the problem such as 'Lack of awareness towards ICT application on agriculture', 'Bias of private and Govt sector are having difficulty in delivering ICT based information to farmers', 'Inadequate availability of ICT services to rural farmers' and 'Lack of Govt machinery to enlarge ICT application to rural areas' affect the accessing of ICT application in agriculture which ranked from seventh to tenth position respectively under study.

Implication

Still there is a large gap persisting between the delivering and accessing of ICT application in agriculture by the farmers. The Central Government and the State Government should take necessary steps to start more ICT information service centres with adequate facilities by way of preparing long range, useful and realistic information to needed to the farmers to reduce the existing operational deficiencies and problems in agriculture sector. The basic requirements for successful implementation of rural ICTs initiatives are electricity, hardware, appropriate software, telephony, network connectivity and policy guidelines.

The content creation in local language is a prerequisite for success of accessing ICT application in agriculture by majority farmers. It is imperative to develop locally relevant content in local language and to present it intelligibly as well as offering suitable and adequate training. Also, the nature of local content varies from region to region. Without accessible, local content that addresses the real problems of local people in their own language and in terms that they can understand. The FM radio programs private cable TV programmes, especially designed to appeal to ordinary people are more effective than computers in reaching people about topics like best agricultural practices, since about 100% of the Indian population has access to this media. Hence Indian Govt's ICTs projects should assist rural communities especially farmers by providing them with news, information, advice and knowledge that has hitherto been inaccessible to them. This information has allowed rural citizens/farmers to make more informed agri related production and marketing decisions. But until the cost of basic IT devices that deliver the 'last mile' of connectivity and local language software is lowered, the goal of wiring rural India for ICT services will remain a dream.

Conclusion

By this study, the authors concludes that the Indian Govt is being made a remarkable achievements especially in the area of agriculture by giving various facilities to the farmers in which the ICT services is one among which is helping the farmers to understand the modern cultivation methods, availability of agriculture inputs, irrigational sources, availability of pesticide and fertilizers for increasing the production and productivity of crops. India is a developing economic country where agriculture forms the backbone of Indian economy. Despite concentration of industrialization, agriculture remains in a place of pride. For a long period of time, Indian rural communities especially farmers have been facing number of socio-economic problems. So various planners and administrators of the agriculture dept of the government must consider the threats faced by farmers to protect their interest as well as the interest of the nation. By reducing the level of problems faced by the farmers, the nation as a whole shall march towards a prosperous future.

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