



## KNOWLEDGE OF FARMERS ABOUT USE OF ICT TOOLS IN AGRICULTURAL DEVELOPMENT

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### Abstract

*This study was carried out in Kheda district of Central Gujarat to find out the knowledge of farmers about use of ICT tools in agricultural development and the study revealed that majority of farmers belonged to middle age group, had primary to secondary level of education, had three to five family members, ₹ 500001 to ₹ 100000 annual income, 1.1 to 2 hectare of land and majority of respondents belonged to farming occupation only and majority of respondents had knowledge about ICT tools to collect information like improved variety, post-harvest management, soil analysis and market rate*

**Key words:** ICT, Knowledge, Use, Extent, Farmers.

### Introduction

Information and Communication Technology (ICT) in agriculture is an emerging field focusing on the enhancement of agricultural and other development in India. The agriculture sector is gearing itself to make optimal use of the new information and communication technologies. At present, the information and communication technology (ICT) revolution has made the extension function more efficient and effective and provide extension systems with opportunities to deliver new information services to the clients. Now-a-days, it also provides new options for accessing information by providing it directly to

farmers and rural households by extension agents, agribusiness and other intermediaries. According to UNESCO, the ICT can be broadly understood as the technologies that facilitate communication, processing and transmission of communication by electronic means. It is one of the most important and challenging field in today's world. In recent years, there is a visible shift from the old ways of delivering information to the modern ways of information delivery systems. 45 % of the world's ICT projects implemented in India and also Asia's highest number of information kiosks implemented across rural India. However, the most of the rural ICT projects are implemented in the socio- economically developed states of South and North India. Numbers of ICT initiatives are documented and online available. Some of the e-agriculture initiatives in India are AGMARKET, AGRISNET, ASHA, Ashwini, e-Arik, e-sagu, e-KRISHI VIPANAN, Gyandoot, HP i-Community, ITC e-choupal, Agriwatch Portal etc. Gujarat has been one of the frontline state in the implementation of e-governance policies and projects in India. Independent agencies have rated Gujarat as one of the most e-prepared state in the country. Gujarat is an aspiring leader with e-readiness initiatives with the IT Policy. Gujarat has been position at L2 stage in Information Communication Technologies (ICTs) which is categorized based on environment, readiness and usage applications. The advancements in ICT can be utilized for providing accurate, timely, relevant information and services to the farmers, thereby facilitating an environment that agriculture occupation is also of remunerative. ICT has revolutionized the process of transfer of technology by making available information from various sectors quickly and accurately. The use of ICT in agriculture extension witnessed a significant impact on the growth of agriculture. Still there is substantial scope for enhance the role of ICT in agriculture. Doubling the farm income within 2022 is new challenge. Judicious use of inputs and precision farming knowledge intensive for dissemination of technology of knowledge through ICTs. This a need to know the existing socio-economic profile and knowledge of farmers about ICT tools. With this background the present study has been formulated.

## *Methodology*

### **Sample design**

In the present study, a multistage sampling technique was used for selection of samples.

### **Selection of the study area**

The study was conducted in Kheda district. The Kheda district is comprises of 8 blocks, out of 8 blocks, Mahemdavad, Nadiad and Kheda blocks were selected purposively because it served a great deal of convenience to the researcher for easy accessibility, rapport buildings and online communication sources.

### **Selection of the villages**

For selection of villages, a list of villages comes under these blocks was prepared and 12 villages were selected for the study.

### **Selection of the respondents**

After the selection of villages, village wise list of farmers was prepared and among them 10 respondents from each village were selected on the basis of random sampling methods. Thus, the total 120 respondents were selected for sample size.

### **Instruments of data collection**

The instrument of data collection was the interview schedule which was prepared on the basis of the objectives of the study. Before the actual collection of data, the interview schedule was tested for the convenience of data collection. The interview schedule was prepared in Gujarati.

### **Method of data collection**

Survey method of enquiry was used for data collection. The data were collected through a well-structured and pre tested interview schedule. The researcher was personally meet to the respondents and explained to them about the purpose of the study. The data were collected and recorded in free and frank atmosphere where the interviewer and interviewee may have a good rapport.

### **Statistical analysis of data**

Data collected were qualitative as well as quantitative. The quantitative data were interpreted in terms of percentage and qualitative data were tabulated on the basis of categorization methods.

After tabulation, statistically tools like frequency and percentage were used.

## Results and Discussion

*Table 1: Personal and socio-economic characteristics of the farmers using ICT tools  
n = 120*

<i>Sr. No.</i>	<i>Characteristics</i>	<i>Frequency</i>	<i>Per cent</i>
1.	Age		
	i. Young Age ( up to 30 years)	27	22.50
	ii. Middle Age (31 to 50 years)	61	50.83
	iii Old Age (Above 50 years)	32	26.67
2.	Education		
	i. Illiterate	02	01.67
	ii. Primary education (up to vii std.)	30	25.00
	iii. Secondary education (viii to x)	44	36.67
	iv. Higher secondary (xi to xii)	23	19.16
	v. Graduate	21	17.50
3.	Family Members		
	i. Up to 3	19	15.83
	ii. 4 to 5	67	55.84
	iii. Above 5	34	28.33
4.	Annual Income		
	i. Up to Rs. 50000	37	30.83
	ii. 50001 to Rs. 100000	58	48.33
	iii. Above Rs. 100000	25	20.84
5.	Land holding		
	i. Up to 1 hectare	31	25.83
	ii. 1.1 to 2 hectares	62	51.67
	iii. Above 2 hectares	27	22.50
6.	Occupation		
	i. Farming	83	69.16
	ii. Farming + Job	24	20.00
	iii. Farming + Business	13	10.84

Table 1 shows that slightly more than half (50.83 per cent) of farmers were belonging to middle age group. More than two fourth (61.67 per cent) of respondents had primary to secondary level of education followed by 36.66 per cent from them had graduation to higher secondary level of education. More than half (55.84 per cent) of respondents had four to five family members followed by 28.33 per cent and 15.83 per cent had above 5 and up to 3 family members in their

family respectively. 48.33 per cent of respondents had ₹ 500001 to ₹ 100000 annual income while slightly more than half (51.67 per cent) of respondents had 1.1 to 2 hectares of land. As far as occupation is concerned, majority (69.16 per cent) of respondents were belonging to farming occupation only.

*Table 2: Extension Participation  
n = 120*

Sr. No.	Statement	Always		Often		Sometime		Never	
		F	P	F	P	F	P	F	P
1	Was there any crop demonstration organized at your field?	08	06.66	11	9.16	39	32.50	62	51.67
2	Have you have ever participated in any extension programme/activity?	21	17.50	24	20.00	47	39.16	28	23.33
3	Have you ever contacted extension officer?	19	15.83	33	27.50	48	40.00	20	16.67
4	Have you ever participated in field day?	06	05.00	11	09.16	29	24.16	74	61.67
5	Have you ever participated in Krishi Mahotsav/Krishimela?	23	19.16	26	21.67	50	41.67	21	17.50

\* F= Frequency, P= Percentage

A perusal of data presented in Table 2 reveals that there was no any crop demonstration organized in the field of majority (51.67 per cent) of farmers whereas slightly less than two fifth (39.16 per cent) of respondents had participated sometime in many extension programmes. Two fifth (40.00 per cent) of respondents had contacted sometime with extension officer while more than three fifth (61.67 per cent) of respondents had never participated in field day. Majority of respondents (41.67 per cent) of respondents had participated sometime in Krishi Mahotsava/ Krishimela.

The data mentioned in table 3 indicates that 19.17 per cent of respondents had knowledge regarding use of ICT tools for getting weather related information followed by soil analysis (32.50 per cent), seed bed preparation (11.67 per cent), nursery (17.50 per cent), improved variety (35.83 per cent), availability of quality seed (22.50 per cent), seed treatment (7.50 per cent), sowing practices (10.00 per cent), recommended seed rate (14.17 per cent), recommended doses of fertilizer (15.83 per cent), interculturing practices (5.83 per cent), weed and weed management

**Table 3: Knowledge of farmers about use of ICT tools in agricultural development  
n = 120**

<i>Sr. No.</i>	<i>Types of information</i>	<i>Frequency</i>	<i>Percentage</i>
1	Weather related information	23	19.17
2	Soil analysis	39	32.50
3	Seed bed preparation	14	11.67
4	Nursery	21	17.50
5	Improve variety	43	35.83
6	Availability of quality seed	27	22.50
7	Seed treatment	09	07.50
8	Sowing practices	12	10.00
9	Recommended seed rate	17	14.17
10	Recommended doses of fertilizer	19	15.83
11	Use of bio and organic fertilizer	24	20.00
12	Interculturing Practices	07	05.83
13	Weed and weed Management	11	09.17
14	Insect-pest and their management	11	09.17
15	Disease and their management	14	11.67
16	Information regarding herbicide	18	15.00
17	Information regarding fungicide	18	15.00
18	Information regarding insecticide	18	15.00
19	Post harvest management	41	34.17
20	Seed storage	03	02.50
21	Market rate	31	25.83

\* F= Frequency, P= Percentage

(9.17 per cent), insect-pest and their management (9.17 per cent), disease and their management (11.67 per cent), information regarding herbicide (15.00 per cent), information regarding fungicide (15.00 per cent), information regarding insecticide (15.00 per cent), post-harvest management (34.17 per cent), seed storage (2.50 per cent) and market rate (25.83 per cent).

### **Conclusion**

It has been concluded from the study that majority of farmers were belonging to middle age group, had primary to secondary level of education, had three to five family members, ₹ 500001 to ₹ 100000 annual income, 1.1 to 2 hectare of land and majority of respondents

were belonging to farming occupation only. There was no any crop demonstration organized in the field of majority of farmers whereas majority of respondents had participated sometime in many extension programmes and contacted with extension officer as well as participated sometime in Krishi Mahotsava/Krishimela while majority of respondents had never participated in field day. As far as knowledge is concerned, majority of respondents had knowledge about ICT tools to collect information like improved variety, post-harvest management, soil analysis and market rate.

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