

KRISHK HELP LINE SEVA: AN EFFECTIVE ICT TOOL FOR DISSEMINATION THE AGRICULTURAL INFORMATION

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The potential for application of ICT in the agriculture sector is high. The new tools and techniques are evolving and the implications of that are clearly visible at the global scale. But the level of penetration of ICT is very low in India since the rural masses are not aware of the new innovations. Towards this, an initiative by the Vivekananda Parvatiya Krishi Anusandhan Sansthan (V.P.K.A.S.) on use of ICT for the delivery of Agriculture related services through toll free "Krishak Helpline Seva" made very significant leaps. The present study was undertaken at V.P.K.A.S., Almora. The documented record of frequently asked questions (FAQs) in Krishak Helpline Seva by the farmers from 2005-2010 were compiled to know the major agricultural problems faced by the farmers. On the basis of FAQs a model on "**Dissemination of information to farmers**" was developed.

Keywords : ICT, Krishak Helpline Seva, Agricultural Problems, Dissemination of Information.

Agriculture is the main occupation of rural population for their livelihood in NW hill states. But about 82 per cent of cultivated land in Uttarakhand hills, 80 per cent in Himachal Pradesh and 59 per cent in Jammu & Kashmir is under rainfed agriculture. The adoption of intensive agriculture in these rainfed areas eludes due to lack of water, unavailability of quality and authenticated seed at proper time and place, lack of knowledge about the new technology, non availability of accurate information on time and at nearby place. In hills, the problem is compounded due to harsh geographical conditions and lack of infrastructure. Thus, the agriculture productivity is low.

The major crops are grown in the region during kharif (May to September/ October) or rabi (October to May). Rice, maize, finger millet, barnyard millet, soybean, horse gram, and beans are major kharif crops and wheat, barley, mustard, lentil and field pea are the major rabi crops. Spring rice is the typical crop being grown under rainfed condition in upland areas of Uttarakhand hills.

Indian Agriculture is on the threshold and need a second revolution. It is clear that

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the next leap will come from the information and the knowledge based technology transfer to the agriculture sector, coupled with entire backend supply chain starting from seed to other inputs. The real challenge before the policy makers is to overcome the information asymmetry among farmers, villages, regions and countries. Fortunately, the developments in the field of information communication and technology in India make it possible to attempt this task.

Today we are living in era of Information Communication and Technology (ICT). ICT mean any product or system that communicates stores and/or processes the information in a very systematic and simple algorithm. ICT has been imbibed as an essential part of our daily life. The information can exchange rapidly through the ICT. ICT is playing an important role in various fields like railway, banking, industries etc. The potential for application of ICT in the agriculture sector is also high. The new tools and techniques are evolving and the implications of that are clearly visible at the global scale. But the level of presentation of ICT is very low in India since the rural masses are not aware of the new technology innovations (**Annamalai and Rao, 2003**). Indication of the magnitude and impact of issues related to agricultural development are detailed in **FAO (2008), Bruinsma (2008), Corporate IT (2008)**, and the following figures from the International Fund for Agricultural Development (IFAD) presented at the Atsugi conference at Japan during August, 2008 :

- Agriculture is the source of livelihood for 86% of the rural population who in turn encompass half of humanity;
- Agriculture provides 1.3 billion jobs for small-scale farmers and landless workers;
- GDP growth generated by agriculture has proven 2-4 times more effective than GDP growth in other sectors;
- More than 80% of the decline in worldwide rural poverty from 1993-2002 can be attributed to agricultural results, largely due to technological innovation;

Recent advances in ICT are making it more feasible to provide farmers with agricultural information they need. However, farmers are still lagging behind in getting the information as accessibility to this technology is not available to them for various reasons. The major reason for this is abundance of small and marginal farmers without formal education and training in proper decision making (**Batchelor and O'Farrell, 2003**).

The report of the 'Task Force on India as Knowledge Superpower' (**GOI, 2001**) emphasized the necessity of developing the capacity to generate, absorb, disseminate and protect knowledge and exploit it as a powerful tool to derive societal transformation. ICT is seen as an important means of achieving such a transformation. The country today has an impressive telecom network both in the private and Government sector. Over 5 lakh villages have a public telephone in the country. It has been felt for long that this impressive telecom network could be put to effective use for delivering knowledge and information to the farming community (**Swaminathan, 1993**). With the decrease in the number of extension workers, there was a need to use the latest technologies for delivering extension services (**Greenridge, 2003; Lightfoot, 2003**).

Krishak Helpline Seva : An initiative

There are many media of ICT like Internet, TV, Video conferencing, Telephone etc. An innovation through use of ICT by the Vivekananda Parvatiya Krishi Anusandhan Sansthan (V.P.K.A.S.) for the delivery of agriculture related services "Krishak Helpline Seva" on toll free number with intent to deliver knowledge and information exactly as per the requirements of the farming community at the least possible cost has been initiated in the year 2001. With the increase in choices of farm inputs, pesticides, herbicides, high yielding varieties of seeds, a farmer today require guidance of experts to whom he can share his crop related issues and learn efficient agri-measures. This system also helped to keep a record of what is being delivered to the farmers in terms of knowledge and information as well as to solve the problems of farming community. The main objective of the "Krishak Helpline Seva" was to make agriculture knowledge available at free of cost to the farmers as and when desired. It helps the farmers in decision making process. The farmer makes decision on getting the information to enhance their productivity and profitability. It's save the time and reduces the cost of traveling. It not only helps farmer make profitable decisions in short term but also has other vital function, viz., of helping farmers decide what to do or not do. The level of satisfaction is evident from the fact that most of the calls are "Thank You" calls. In such a scenario, greater use will have to be made by researchers and farmers of available modern information technology and communication. In fact, "a quick and continuous two-way interaction between the farmers and agricultural scientists is the key to the success of the "Krishak Helpline Seva."

The "Krishak Helpline Seva" run by the V.P.K.A.S. has been functioning since July 8, 2001. The existing toll-free service is adequate to provide information on the calls received from the farmers and are serving the needs of farmers in the entire country. A massive publicity campaign through advertisement in mass-media and print media had been launched to create wide awareness about the scheme. The toll-free number of the service is 1800-180-2311 which expands the accessibility through mobile phones of all telephone service providers' networks. Therefore this ICT service - a single-knowledge pool catering to hill farmers - is proving a boon for the farming community. In other words, the ICT service capitalize on the existing specialized infrastructure of call centers to make this communication backbone available to specialists in the field of agriculture, horticulture, animal husbandry, marketing and other related areas.

Operational Mechanism

The "Krishak Helpline Seva." is a synthesis of two hitherto separate technologies namely, the Information & Communication Technology (ICT) and the Agricultural Technology. To optimally utilize the strengths of both these systems, it was proposed to take full advantage of specialized knowledge of Agricultural Scientists and Extension Officers, so as to facilitate its reach to the farming community. Krishak Help Line Seva is becoming the popular among the hill farmers. This paper presented the effective use of ICT tool for sustainable agriculture.

Research Methodology

The present study was undertaken at V.P.K.A.S., Almora. The documented record of frequently asked questions (FAQs) in *Krishak Helpline Seva* by the farmers from 2005-2010 were compiled to know the major agricultural problems faced by the farmers. On the basis of FAQs a model on "**Dissemination of information to farmers**" was developed.

Results and Discussion

Distribution of area on the basis of locality

In the present study it was found that most of the questions were asked from Uttarakhand state. The major area covered under this was in Kumaon Region (Almora, Champawat, Pithoragarh, Nanital, Udham Singh Nagar, Bageshwar Districts) and Garhwal region (Pauri, Uttarkashi, Tihri, Dehradun, Haridwar and Rudraprayag Districts). Apart from Uttarakhand, some queries were asked from other states as J&K, Haryana, U.P., and Gujarat also (Table 1).

Table - 1 : Distribution of area on the basis of locality

S. No.	State	Region Covered	Districts
1.	Uttarakhand	Kumaon	Almora
			Champawat
			Pithoragarh
			Nanital,
			Udham Singh Nagar
			Bageshwar
		Garhwal	Pauri
			Uttarkashi
			Tihri
			Dehradun
			Haridwar
Rudraprayag			
2.	J & K	-	Jammu

3.	Haryana	-	Faridabad
			Gurgaon
			Rohtak
4.	Uttar Pradesh	-	Moradabad
			Rampur
			Muzaffarnagar
			Saharanpur
			Bareilly
			Lucknow
			Ghaziabad
5.	Gujarat	-	Ahmedabad
			Anand
			Bharuch

Frequently Asked Questions in "Krishak Helpline Seva"

It is clearly evident from Table 2 that most of the questions were asked in reference to plant protection measures, plant production, crop improvement, technological Know-how, package and practices available and human resources development. Approximately, 33.8 percent questions were asked regarding crop production aspect which includes development of new varieties, vegetable cultivation, crop rotation, fodder cultivation, protected cultivation, fruit plantation and floriculture and medicinal & aromatic plants. However FAQs under other major domain were asked by farmers were crop protection and management (26.6 %), seed availability and seed treatment (16.71 %), nutrient management and fertilizer application (3.68 %), farm machinery and post harvest technology (2.83 %), soil treatment (0.56 %), SES, farm credit & social organization (1.70 %), water harvesting techniques (0.85 %), animal husbandry (0.85 %) etc.

Table - 2 : Frequently Asked Questions about Agriculture and Allied Services in "Krishak Helpline Seva" in V.P.K.A.S. Almora

N=353

Sl. No.	FAQs Domain		Frequency	Percentage
1	Seed Availability/ Treatment		59	16.71
2	Crop Protection and Management (Insect, Pest, Disease/ Weed Control)		94	26.63
3	Nutrient Management and Fertilizer Application		13	3.68
4	Crop Production	Variety	22	6.23
		Vegetable Cultivation	29	8.22
		Crop Rotation	1	0.28
		Fodder Cultivation	8	2.26
		Protected Cultivation (Polyhouse)	21	5.95
		Fruit Plantation	29	8.21
		Floriculture and Medicinal & Aromatic Plant	9	2.54
5		Farm Machinery and PHTs		10
6	Agricultural Literature Availability		6	1.70
7	Soil Treatment		2	0.56
8	Bee Keeping		7	1.98
9	Water Harvesting (Poly Tanks and MIS)		3	0.85
10	Animal Husbandry		3	0.85
11	Mushroom Cultivation		5	1.41
12	SES, Farm Credit & Social Organization		6	1.70
13	Institute visit/Exposure/Workshop/Farmer's Fair		18	5.10
14	Radio Programmes run by Institute		4	1.13

Along with agriculture and allied services some questions were asked in respect to institute visit/ workshop/ training/ farmer's fair (5.10 %) and radio programme (1.13 %) run by V.P.K.A.S.

Season wise FAQs about agricultural issues

Frequently asked questions were compared year wise (Table 3 and Fig:1) along with rabi and kharif season and it was found from study that more number of queries come into Krishak Helpline Seva in the kharif season because most of the crop protection and management is required during this period. However, in the rabi season also farmers were encountering agricultural related problems and clarifying their queries but number of FAQs were less then kharif season. Further it was found that year wise trend of FAQs were increasing due to popularity of Krishak Helpline Seva among farmers.

Table - 3 : Year Wise FAQs in Different Season

N=353

Season	Year					
	2005	2006	2007	2008	2009	2010
RABI	11	13	21	25	28	31
	(3.11)	(3.68)	(5.94)	(7.08)	(7.93)	(8.78)
KHARIF	27	33	30	38	42	54
	(7.64)	(9.35)	(8.49)	(10.76)	(11.89)	(15.29)

Note : figures in parenthesis shows percentage value

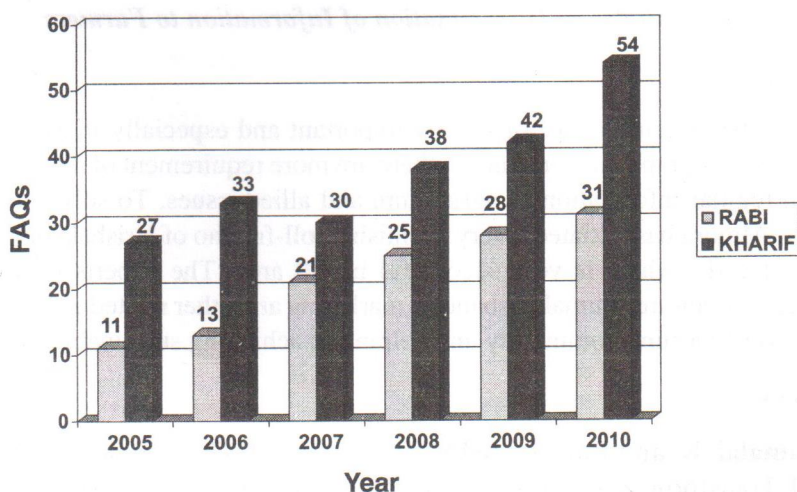


Fig :1 Season wise FAQs about agricultural issues

Development of Model on Dissemination of Information to Farmers

On the basis of FAQs regarding agriculture and allied aspects a model on "Dissemination of Information to Farmers" was developed. In this model the major issues handled by agriculture scientists and extension officers were regarding plant protection, protected cultivation, vegetables and offseason vegetables, new varieties and seeds, latest technological know-how, human resource development, post harvest technology, and packages and practices. The model (Fig: 2) suggests the main issues of agriculture and allied sector handled by Krishak Helpline (Farmer's Call Centers).

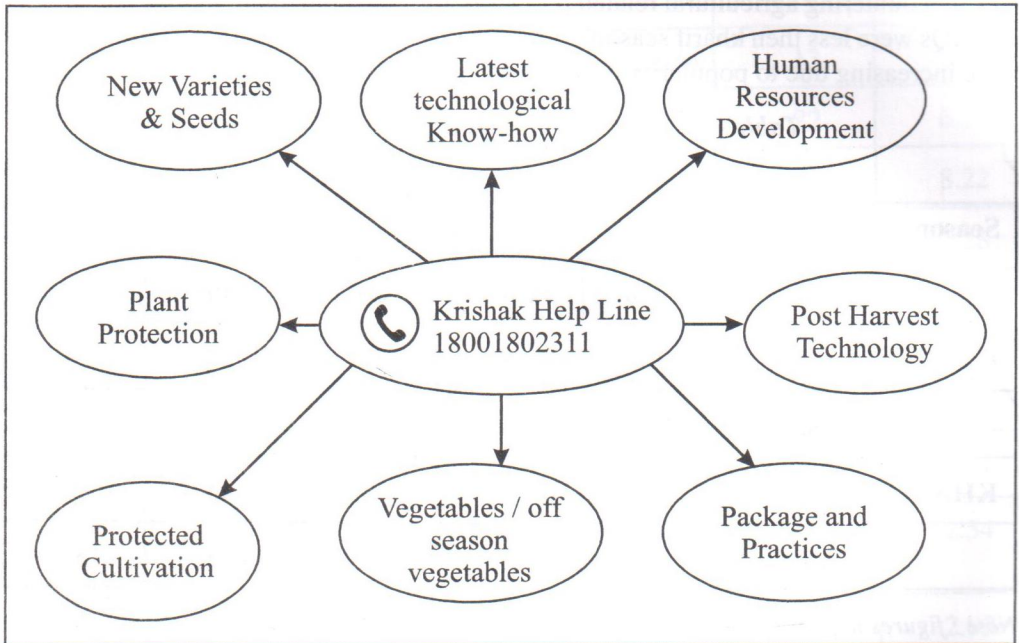


Fig 2 : Model on Dissemination of Information to Farmers

Conclusion

ICT in the agriculture sector is very important and especially in hill agriculture system (due to geographical constraints) there are more requirement of dissemination of proper and regular information of agriculture and allied issues. To solve this purpose V.P.K.A.S. Almora has initiated a very promising toll-free no of Krishak Helpline Seva in the last decade, which is very successful in hill area. The experts in the field of agriculture, horticulture, animal husbandry, marketing and other related areas are solving the problems of farming community and helping in achieving sustainable agriculture.

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