

Tele-Agri-Advisory Services for Farmers: a Case Study of Kisan Call Centre in Andhra Pradesh

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Abstract

Access to information and improved communication is a crucial requirement for sustainable agricultural development. Information and Communication Technologies, can play a vital role by establishing a network among the researchers, extension personnel, and farmers for transfer of information. This paper examines Tele Agri Advisory services to farmers through Kisan Call Centre in Andhra Pradesh. The paper looks at call trends, level of farmers' satisfaction and implementation of solutions / recommendations offered by the Kisan Call Center, effectiveness of capacity building programmes, identifies issues, constraints and problems at various levels and gives suggestions for improvement.

1. Introduction

Information and communication technologies when applied to conditions at the grass root level can help improve communication, increase participation, disseminate information and share knowledge and skills. However it is observed that the rural population still have difficulty in accessing crucial information. The challenge is not only to improve the accessibility to information and communication technologies but also to make available the repository of information / knowledge at one place to serve the rural and farming community.

India being an agricultural country, contributing about 15 per cent to Indian Gross Domestic Product (GDP) and with 50-60 per cent of the population dependent on the agriculture sector for their livelihood, the farming society needs to be enriched on agricultural technologies on a regular basis to sustain self sufficiency in food.

To achieve this, there is a need for effective dissemination of information among the key stakeholders. All the information relevant to farmers should be made available to them at a single point. The number of farmers in India is too large to be reached by face-to-face extension. Mass Media particularly Radio

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played a key role in enhancing the outreach of the Extension system during the Green Revolution. The Television has also added to the technology dissemination with a number of farmer centric programmes on Doordarshan and a few private channels like e-T.V. Both these channels (Radio and T.V.) are mainly one-way communication, with a few interactive programmes (phone-in). The farmers' questions continue to be answered only by scientists of State Agricultural Universities (SAUs) and extension personnel. Most of the SAUs have initiated Farmers' Call Centres at their Agricultural Technology Information Centres (ATICs). These centers are stand-alone and do not necessarily have on-line access to their own SAU research findings and recommendations, while answering farmers queries. This is very important considering the complex nature of farmers' queries and the need to provide the latest update on research recommendations to the farmers.

This can be achieved more effectively with efficient use of Information and Communication Technologies, which can play a vital role in Agricultural Extension Management by establishing a perfect network among the researchers who actually develop the technology, extension personnel who deliver the technology and the farmer who adopts the technological know how. At present the extension system in the country is taking care to transfer technology successfully through State Agricultural Universities, State Government Departments, Krishi Vigyan Kendras (KVKs), Non Governmental Organizations (NGOs) etc. However the limitation of the extension system for technology transfer is still a challenge. Over 50 per cent of the farmers are still beyond the reach of any extension service (NSSO, 2005). The direct reach of public extension services (KVKs, extension workers and government departments) is less than 10 percent (NSSO 2005). Face-to-face extension is a very costly proposition as the cost involved in terms of manpower and logistics (travel costs etc) is increasing day by day. In order to meet this challenge and to fill the gap, more cost effective technologies with wider reach like the telephone network and Internet could provide a possible answer.

There is a need to establish centers which bridge the gap between research, extension and farmers. There is also a need to evaluate these centers from time to time to improve the delivery mechanism to farmers. This study examines Tele Agri Advisory Services for farmers through Kisan Call Centres in Andhra Pradesh. Data has been drawn from KCC Farmer Call database at Level-I.

2. Objectives

- To study the call trends in order to identify the call share of various crops, crop problems, call regions, frequently calling farmers and the answering levels and the reasons for the increasing and decreasing call share.
- To examine whether the farmers are really satisfied and implementing the solutions / recommendations offered by the Kisan Call Center.
- To find out the best media which can bring awareness about KCC or other governmental schemes among the farming community.
- To ascertain whether capacity building training programmes are useful.
- To examine whether all the stakeholders of Kisan Call Center are satisfied with the present setup or whether there are any suggestions for further improving the functioning and effectiveness of KCC.
- To identify the issues, constraints and problems at various levels and suggest improvements.

3. Central Government Initiative

The Department of Agriculture and Cooperation (DAC), Ministry of Agriculture, Govt. of India launched Kisan Call Centers (KCC) on January 21, 2004 across the country to leverage the extensive telecom infrastructure in the country to deliver agricultural extension services to the farming community. The purpose of these call centers is to mainly respond to issues raised by farmers instantly in the local language on continuous basis.

4. Concept of Kisan Call Center

The Kisan Call Center (KCC) is a synthesis of two separate technologies namely, Information and Communication Technology (ICT) and Agricultural Technology. To optimally utilize both of these technologies, the KCC uses the services of agricultural scientists, extension officers and other subject matter specialists so as to facilitate its reach to the farming community. The call center is setup primarily to help address the problems that are being faced by farmers in the field and also to inform them about the schemes that are being designed by the government for the farming community.

Kisan Call Centers were launched on January 21st, 2004. To start with, 8 call centers (Andhra Pradesh, Maharashtra, Karnataka, Uttar Pradesh, Tamil Nadu, Punjab, Delhi and West Bengal) were initiated countrywide. As of now (September 2011), there are 25 call centers covering the entire country (Table 1). These call centers answer the Farmers calls in vernacular language and employ

local agriculture graduates with all round agriculture knowledge, to answer the queries. To access this service, the farmer has to dial a toll free number 1800-180-1551 (from any mobile or 1551 from a landline) that will land at the state-level (for the concerned state) call center.

Table 1. Operational Kisan Call Centers in India

S.No.	State / UT	KCC Location	Language
1.	Andhra Pradesh	Hyderabad	Telugu
2.	Arunachal Pradesh	Itanagar	Adi
3.	Assam Manipur Nagaland	Guwahati	Assamese Manipuri Nagamese
4.	Bihar	Patna	Hindi
5.	Chattisgarh	Raipur	Hindi
6.	Delhi	New Delhi	Hindi
7.	Gujarat, Daman & Diu, Dadar & Nagar Haveli	Ahmedabad	Gujarati
8.	Himachal Pradesh	Shimla	Hindi
9.	Jammu & Kashmir Kashmir Valley Ladakh Region	Jammu	Dogri Kashmiri Ladakh
10.	Jharkhand	Ranchi	Hindi
11.	Karnataka	Bangalore	Kannada
12.	Kerala & Lakshadweep	Trichur	Malayalam
13.	Madhya Pradesh	Jabalpur	Hindi
14.	Maharashtra Goa	Nagpur	Marathi Goan
15.	Meghalaya	Shillong	Khasi
16.	Mizoram	Aizwal	Mizo
17.	Orissa	Bhubaneshwar	Oriya
18.	Punjab Haryana	Chandigarh	Punjab Hindi / Haryanvi
19.	Rajasthan	Jaipur	Hindi
20.	Sikkim	Gangtok	Sikkimese
21.	Tamil Nadu & Pondicherry	Coimbatore	Tamil
22.	Tripura	Agartala	Bengali
23.	Uttarakhand	Dehradun	Hindi
24.	Uttar Pradesh	Kanpur	Hindi
25.	West Bengal, Andaman & Nicobar	Kolkata	Bengali

Source: Monthly Operations Reports for Kisan Call Centers to Department of Agriculture & Cooperation (DAC), Ministry of Agriculture, Government of India by Telecommunications Consultants India Limited

5. Main Features of KCC

- Accessible through toll free number 1800-180-1551 / 1551 in 22 Indian languages
- 25 call center locations
- 144 call center seats
- Handling more than 2000 calls on a daily basis
- Working time: 6 am to 10 pm with 3 shifts (6 am to 2 pm, 10 am to 6 pm and 2 pm to 10 pm)
- Call data accessible through the web

6. Functioning of Kisan Call Center (KCC)

The KCC operates at three levels – viz., Level-I, Level-II and Level-III.

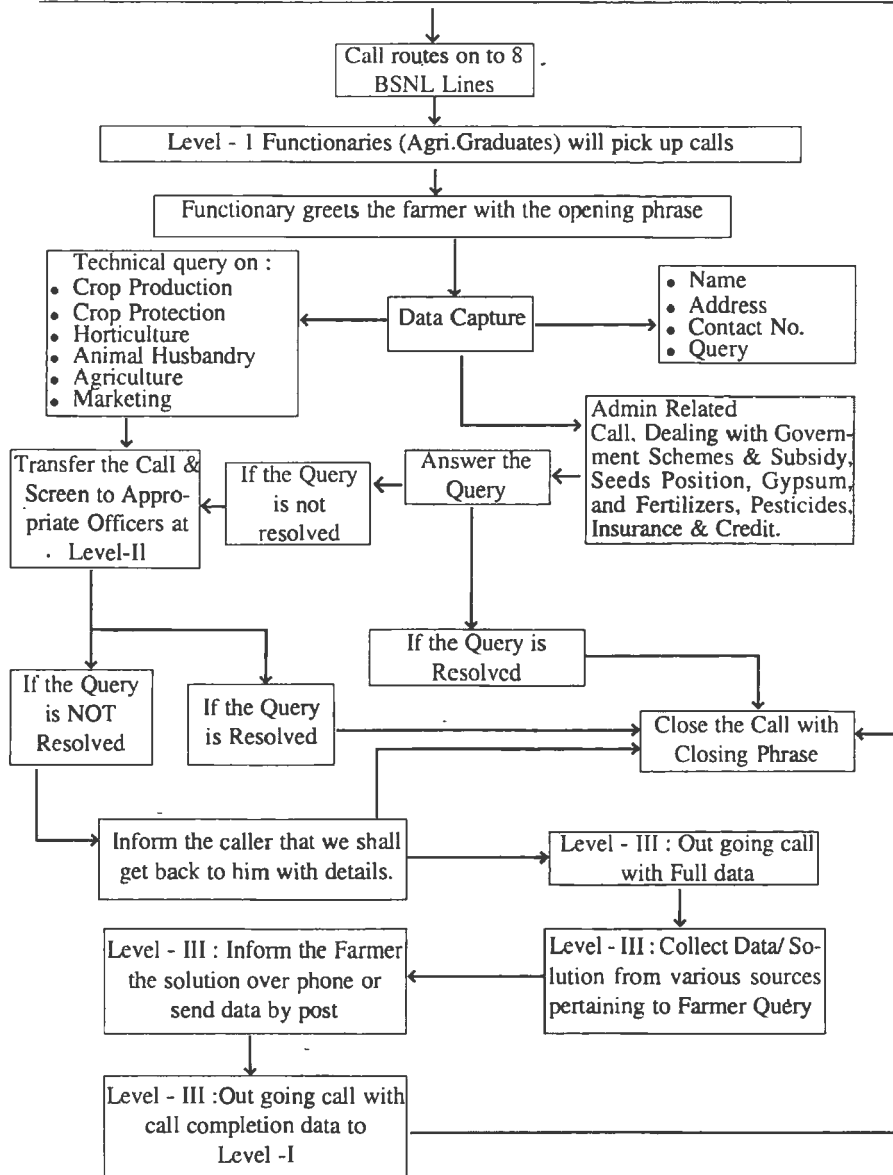
- **Level - I:** This is a basic Call Center interface, consisting of high quality telecom infrastructure, adequate data processing equipment and local language proficient Agriculture Graduates. They receive the call from the farmer after a short welcome message. The basic details regarding information about the farmer and the query regarding the problems that he / she is facing with crop or animal or agri-related governmental schemes, are fed into the computer in order to document all the received calls. Agricultural Graduates at this level answer farmers' queries, with their agriculture knowledge based on educational background, referring to general Books on Agriculture, literature and brochures on agriculture or the Vyavasaya Panchangam (solutions to various crop/ pests / diseases including package of practices) published every year by Acharya NG Ranga Agricultural University.
- **Level – II:** If the call cannot be answered by Level-I, then it is escalated to Level-II where Subject Matter Specialists, in the areas of crop technology (agricultural university / ICAR) and about programmes / schemes (technical officials of departments of agriculture, animal husbandry, horticulture, fisheries, marketing etc.) respond to the farmer. There are 4 - 7 level-II experts in the state level call centers.
- **Level – III:** If the call cannot be answered even at Level-II, it is escalated to Level-III Nodal Institution / Office, where an Institute or agency which looks after the working of KCC in the concerned state responds to the query. The response is sent promptly by post or telephone within 72 hours of receipt of the question, by Level-III.

During the working hours there would be an immediate response. Beyond working hours or on holidays, the call is recorded and the query is answered later by post or telephone.

7. KCC Call Process

The overall functioning and flow control of Kisan Call Center activities can be depicted pictorially as follows:

Farmer dials Kisan Call Center Line “1800-180-1551 or 1551”



8. Level-II in Andhra Pradesh

The departments mentioned below are participating at Level-II in the service of farmers through KCC activities in Andhra Pradesh.:

S.No.	Place
1.	The Director (ITDP) MANAGE, Rajendranagar, Hyderabad – 500 030
2	The Nodal Officer, ATIC, Rajendranagar, Hyderabad – 500 030
3.	The Principal Scientist & Head TTT DRR, Rajendranagar, Hyderabad 30
4.	The Deputy Director, Directorate of Animal Husbandry, MasabTank, Hyderabad – 500 028
5.	The Asst. Director of Agriculture (Info) Commissionerate of Agriculture, Basheerbagh, Hyderabad
6.	The Horticulture Officer Commissioner of Horticulture, Public Gardents, Nampally, Hyderabad
7	The Asst. Director of Marketing, Directorate of Marketing, BRK Building, Tank Bund, Hyderabad – 500 007
8.	The Assistant Director (Fisheries) Matsya Bhawan, Masab Tank, Hyderabad

Similar arrangements are in place in other states.

9. Role of Nodal Institution / Office (Level-III) in the Project

For effective functioning of Kisan Call Center, there is a need to review and inspect the activities of KCC in each state at regular intervals for improving the services of the Center. For the purpose, the Ministry has identified Nodal Institutions across the country whose responsibility is to coordinate the functioning of Kisan Call Center and also organize need based training programmes for Level-I and Level-II functionaries. The Ministry directly interacts with the Nodal Institution / Office to oversee the functioning of KCC in the state. The Nodal Institution / Office also acts as Level-III which apart from monitoring the KCC also responds to farmer queries escalated after Level-II. The response is sent promptly by post or telephone within 72 hours of receipt of the query by Level-III.

10. Overview of Andhra Pradesh Kisan Call Center

The Andhra Pradesh Kisan Call Center is operational since January 21, 2004. The National Institute of Agricultural Extension Management (MANAGE), Rajendranagar, Hyderabad is the Nodal Institution (Level-III) for monitoring the KCC activities in the state of Andhra Pradesh. The key departments such as

Agriculture, Agricultural Technology Information Center of ANGRAU, Directorate of Rice Research (DRR), Horticulture, Animal Husbandry, Marketing, Fisheries and Doordarshan are playing a vital role in successfully managing Kisan Call Center in the state of Andhra Pradesh.

MANAGE maintained the call database on a daily basis till December 2009. The day-wise calls for that day were sent to MANAGE by Level-I the next day. After December 2009, a centralized Kisan Knowledge Management Information Systems (KKMS) was brought into use which centralized the all India call data. As a result, the call data are updated to a centralized server online during interaction with the farmer.

i) District wise / Region wise Call Density of Andhra Pradesh Kisan Call Center

The call density as per the database maintained at MANAGE from January 2004 to December 2009 may be seen in Table 2.

As can be seen from the table, two districts namely, Krishna and Chittoor, contributed more than 20 per cent of the total calls at 11.23 per cent and 10.36 per cent respectively. On the other hand, Srikakulam, Vizianagaram and Vishakapatnam recorded the lowest number of calls at 0.85 per cent, 0.97 per cent and 0.98 per cent respectively i.e. less than 3 per cent of the total calls.

It is observed that there is a fluctuation / decline of call density over time since 2004 to 2009. There are a number of factors which have influenced call density.

1. There was not much publicity about the scheme in the print or electronic media except in newspapers occasionally.
2. The KCC helpline was accessible only through BSNL landline.
3. Less number of call center seats which resulted in calls being engaged repeatedly which discouraged the farmers to call.
4. Major decline in call density was due to a parallel call center being run by the state government.

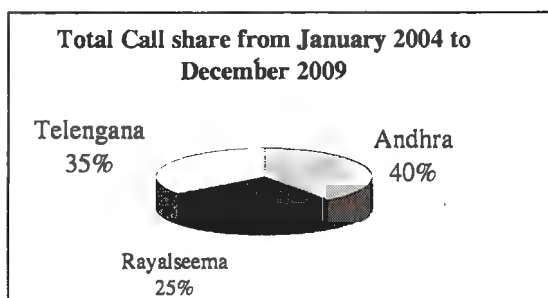
However in the later stages major initiatives were taken which resulted in increased call density. These include:

1. Wide publicity via print and electronic media releasing advertisements about KCC very frequently.
2. KCC helpline made accessible through landline and from any mobile.
3. Increased number of call center seats.

Table 2: District wise / Region wise Call Record

DISTRICT / REGION	2004	2005	2006	2007	2008	2009	Total	Percent
Telengana								
Warangal	1075	1753	787	598	496	491	5200	7.67
Adilabad	517	619	267	644	434	522	3003	4.43
Khammam	349	923	624	409	254	259	2818	4.16
Mahboobnagar	584	814	256	321	221	288	2484	3.67
Rangareddy	340	325	189	485	383	399	2121	3.13
Nalgonda	632	433	171	159	184	339	1918	2.83
Karimnagar	236	476	201	282	284	425	1904	2.81
Medak	709	369	92	173	145	328	1816	2.68
Nizambad	307	344	190	171	249	396	1657	2.45
Hyderabad	303	280	167	129	30	77	986	1.45
TOTAL	5052	6336	2944	3371	2680	3524	23907	35.28
Rayalseema								
Chittoor	153	715	1118	2141	2066	828	7021	10.36
Anantapur	137	436	464	2323	1832	558	5750	8.48
Kurnool	203	719	387	365	264	254	2192	3.23
Cuddapah	359	518	354	230	193	165	1819	2.68
TOTAL	852	2388	2323	5059	4355	1805	16782	24.75
Andhra								
Krishna	510	1863	2081	1330	990	835	7609	11.23
Guntur	407	1921	1477	1240	803	683	6531	9.64
West Godavari	355	1231	1062	718	478	485	4329	6.39
East Godavari	272	653	519	445	272	427	2588	3.82
Nellore	104	408	494	469	407	529	2411	3.56
Prakasam	184	311	379	310	262	267	1713	2.53
Visakhapatnam	135	233	118	56	45	80	667	0.98
Vizianagaram	51	208	98	94	55	151	657	0.97
Srikakulam	39	178	109	68	85	94	573	0.85
TOTAL Andhra	2057	7006	6337	4730	3397	3551	27078	39.97
Grand Total	7961	15730	11604	13160	10432	8880	67767	100
Avg Calls per month							941.2	
Avg Calls per day							31.37	

ii) Graphical Representation of Region wise Calls



iii) Less Number of Calls due to parallel Call Center

On an average, 950 calls per month were recorded during 2004-09 excluding blank, unrelated and other non-KCC calls. On an average around 32 calls were received per day excluding blank, unrelated and other non-KCC calls.

Andhra Pradesh has two call centers for farmers; one being PARISHKARAM, of the State Government and the other being Kisan Call Center, of the Central Government. Due to this the calls were divided among these two call centers resulting in less number of calls as compared with other states.

iv) Call Maturity at Level-I

Table – 3 shows the call maturity at the three levels in AP Call Center during 2004-09.

Table 3. Call Maturity at different levels

S.No.	Level	Year						Avg. Percent
		2004 Percent	2005 Percent	2006 Percent	2007 Percent	2008 Percent	2009 Percent	
1.	I	78	84	86	93	97	97	89
2.	II	11	10	9	6	2	2	7
3	III	11	6	4	1	1	1	4

As can be seen from the above table, the highest number of calls matured at Level-I itself. The reason is that Level-I has been attaining expertise over the period and was in a position to answer farmer calls on their own. They also learn while on conference mode when the scientist is talking to the farmer. Further, the literature on technology and schemes from all the departments are available to them to answer farmer calls. Web based information is also accessible to them at high speed internet connectivity. All these factors contributed to the knowledge enrichment of KCC agents who were in a position to answer a number of farmers' calls on their own.

v) Crop wise calls Statistics

Table 4. Crop wise Calls (2004-09)

S.No.	Crop	Calls	Percent (%)
1	Food Grains	25990	38.36
2	Vegetables	11562	17.07
3	Fruits	6876	10.15
4	Oil Seeds	5309	7.84
5	Fibre Crops	3036	4.48
6	Sugar Crops	944	1.39
7	Flowers & Ornamental Plants	855	1.26
8	Plantation	767	1.13
9	Spices	751	1.11
10	Others	11661	17.21
	Total	67751	100.00

Table – 4 shows highest number of 38 per cent of calls for Food Grains followed by vegetable crops at 17 per cent. Andhra Pradesh farmers cultivate food grains in maximum cultivable land followed by vegetables which earns them some additional income on a regular basis.

vi) Problem wise Call Statistics

Table 5. Problem wise Calls

S.No.	Crop	Calls	Percent
1	Pest Management	22194	32.76
2	Disease Management	13403	19.78
3	Varieties	4111	6.07
4	Fertiliser	3566	5.26
5	Sowing Season	2773	4.09
6	Herbicide	1738	2.57
7	Market Information	1699	2.51
8	Animal Husbandry	1439	2.12
9	Weather	1070	1.58
10	Others	15758	23.26
	Total	67751	100.00

The table above indicates that pest and disease management which are of more concern to farmers contribute to over 50 per cent of the total calls.

vii) Information Sources on Kisan Call Centers

Table 6. Source of Information for Farmers about Kisan Call Centers

S.No.	Crop	Calls	Percent
1	TV Ad	29322	87.40
2	Friends	3744	11.16
3	Internet	318	0.95
4	Pamphlets	16	0.05
5	Magazines	7	0.02
6	News Papers	7	0.02
7	Neighbours	5	0.01
8	Outlets	5	0.01
9	Hoardings	2	0.01
10	Others	125	0.37
	Total	33551	100.00

The data relating to Source of Information for farmers about the Kisan Call Center was recorded by Level-I and was found to be maximum from TV Advertisements which contributed to 87 per cent followed by friends at 11 per cent (Table-6).

The above data reveals television as the best medium to create awareness among farmers about Kisan Call Center. Hence, Government may focus more on publicising on Television apart from other media.

viii) Frequently Calling Farmers

The districts from which farmers have called KCC, a number of times between 2004 and 2009 and the queries raised by them are as under:

Table 7. Frequently Calling Farmers

S.No.	District	No. of times called
1	Khammam	144
2	Karimnagar	97
3.	Hyderabad	31
4	Visakhapatnam	29
5	Rangareddy	28
6	Warangal	24
7.	Medak	22
8.	Krishna	22
9.	Nalgonda	20
10.	Anantapur	20
11.	Chittoor	19

The queries raised by the top callers are as follows:

- Cultivation Methods for SRI Paddy, Jatropa, Poultry, Vermicompost
- Pest / Disease Control measures in paddy, cotton, vegetable crops, fruit crops, animals
- Crop varieties, improved seed varieties
- Weather Forecast
- Fertilizer dosages, bio fertilizers
- Seed availability and Seed Act
- Subsidy schemes
- Market rate
- Sowing season
- Irrigation level
- Contact details of Agriculture officials

ix) Appreciation Calls

As more and more farmers are coming to know about the Kisan Call Center, the calls are increasing day by day. Due to positive results of the recommendations / solutions given by the Kisan Call Center, the number of farmers calling more than once is also increasing. There are very frequent calls from the farmers to express their appreciation for the solutions which have benefited them.

x) Farmers Feedback

Identification of Farmers for feedback

The frequently calling farmers were identified after discussions with KCC agents who now remember the farmers details by heart. These are the farmers who also had developed a kind of dependency on KCC and KCC agents. The farmers were contacted over phone.

Typical feedback from select farmers is given below for illustration

Opinion from a farmer from Mahaboobnagar (translated into English):

“I am cultivating various crops such as, cotton, paddy, jowar, ground nut, kalangiri etc. The KCC officials speak a language that can be easily understood by any farmer. The solutions offered by KCC are working out. We were able to see 100 per cent results against the recommendations of KCC. I am sharing my experiences with other farmers who are also taking initiative to call KCC for their problems. The only problem I am facing is that it is very difficult to get connected to the KCC toll free number, 1800-180-1551. I have to dial 20-25 times every time in order to get connected to the KCC. I request KCC officials to look into this matter and help to connect to KCC number easily. Thanks for the support”.

Opinion from Warangal farmer (translated into English):

“ I am cultivating cotton, paddy and red gram. KCC advice is very useful. I call periodically to take advice for my paddy crop and act as per the recommendations of KCC for water and pesticides to be used. I can see a marginal increase in my production as a result of suggestions from KCC. I request KCC to initiate loan distribution activity directly. I further request KCC to stock fertilizers, seeds and pesticides so that the farmer can buy confidently and use without the fear of duplicates. I tried contacting KCC after seeing an advertisement on TV. However, it is very difficult to get connected to the KCC as I have to dial 50-60 times throughout the day. KCC officials may look into this major problem as many other farmers are withdrawing from calling KCC as they are not getting connected despite several attempts. We shall be grateful if information on all governmental schemes is delivered to farmers via KCC”.

xi) Farmer Calls during the year 2010-2011

It was observed that during 2010-2011 the call rate increased manifold with increase in awareness about KCC among the farming community through other farmers. Word of mouth itself has given publicity to KCC. More and more farmers took the initiative to call KCC after they saw the advertisement about KCC on television. Positive results of the recommendations prompted them to rely on KCC for all kinds of crop problems and other assistance regarding government initiatives.

Table 8. Call share during 2010 and 2011

Months	2010	2011
January	1176	1900
February	1357	1274
March	1437	286
April	1474	1481
May	1504	4668
June	1398	4367
July	2854	4813
August	1733	5184
September	2603	5032
October	480	4154
November	1706	5009
December	1788	5034
TOTAL	19510	43202
Avg/month	1626	3600
Avg/day	54	120

Source: Monthly Operations Reports for Kisan Call Centers to Department of Agriculture & Cooperation (DAC), Ministry of Agriculture, Government of India by Telecommunications Consultants India Limited

The average monthly calls, which were around 1000 during the years 2004 to 2009 increased to 3600 in 2011 which is more than 300 per cent. The average calls per day have also increased from around 33 to 120 calls (Table-8). This increase shows the awareness, positive impact and usefulness of KCC among the farming community.

The serious measures that were undertaken by the Government over the years like frequent publicity about the call center in print and electronic media, giving accessibility to KCC helpline number on all mobiles and increasing the number of call center seats coupled with more awareness, positive impact and usefulness of KCC felt among the farming community contributed to the rapid increase in call density.

xii) Support of Kisan Knowledge Management Information System (KKMS)

KKMS is an online centralized software application which facilitates the individual farmer call data to be recorded on a central server. The data pertaining to all the call center locations in the country are updated in the central server. The KKMS application is also integrated with expert advise. The KCC agents can take help from the application for various problems related to agriculture and allied areas. The application facilitates retrieval of call data for various combinations. Since it is an online application, the Andhra Pradesh KCC is equipped with 1 mbps leased line internet connection.

xiii) Information Sharing via Electronic Media

The Andhra Pradesh Kisan Call Center is receiving good support from Doordarshan Kendra, Hyderabad. Important calls of the day with solutions are sent to Doordarshan Kendra on a daily basis. Doordarshan is telecasting the problems and solutions sent as scrolls on the same day or the next day during the farmer programmes. This helps farmers to obtain solutions for various problems.

xiv) Capacity Development

Mere establishment of the Kisan Call Center does not serve the purpose of the farmer who needs updated information on a regular basis. The knowledge of KCC executives at Level-I needs to be updated on a regular basis. There should be an opportunity for Level-II and Level-III to complement their knowledge. Keeping this in view MANAGE organized one day workshop cum training programmes on a regular basis. Till date 31 training programmes have been organized.

Realizing the fact that on site training would enrich learning, the training programmes are organized at each of the level-II departments on rotation basis to get first hand information from the departmental scientists directly. All the scientists of that department are available for the training programme to share the information. Level-I KCC agents, Level-II scientists (from all departments), Level-III officials and KCC service providers participate in the training programme.

The issues and problems related to KCC functioning are also discussed during the training programme and suggestions are invited and implemented.

Major Changes after Capacity Development Programmes

The changes observed as a result of capacity development programmes are as follows:

1. Level-I, II and III officials know each other and are connected with each other.
2. KCC agents could answer more confidently with latest and updated knowledge.
3. KCC agents are supplied print information on a regular basis by Level-II departments
4. KCC is equipped with latest and updated documented information regarding farmer related information and governmental schemes
5. Newly recruited KCC agents are not information handicapped as they can use the documented information and build their capacities with the help of regular training programmes.
6. Participation of KCC service provider in the training programmes also helped in improving the facilities and functioning of KCC
7. The issues and constraints at Level-II are also discussed and reported to the Ministry from time to time.

11. Conclusion and Observations

Though KCC is playing a vital role in solving farmer problems, there are some areas which need immediate attention. The areas that need immediate attention as given to understand by Level-I, Level-II, Level-III and farmers are as follows:

1. There is dissatisfaction among the farming community that the KCC lines are not easily accessible. One has to try many times to get connected to the KCC. Hence there is a need to increase the number of call center seats in order to handle the increasing number of farmers' calls.

2. KCC should be working 24 hours instead of 6 am to 10 pm (three shifts: 6 am to 2 pm, 9 am to 5 pm and 2 pm to 10 pm). Needy farmers may call between 10 pm and 6 am in case the number is busy during regular shifts.
3. Each shift may have a minimum of 4-5 seats to handle the rush of calls with at least one seat during the night shift.
4. There should be at least a monthly mandatory capacity development training for all the levels in each state to be conducted at each Level-II department on rotation, for on site training and for experience and information sharing.
5. At any point of time, there should be only one Government run (state or central) Kisan Call Center in order to stop division of calls. In case of more call centers, farmers would use these centers in order to cross check the solutions and would be in a state of confusion in case the solutions differ. A single call center would bring in all experts together cutting cost on experts and call center infrastructure.
6. Telephone officials should be made to understand the importance of KCC telephone lines and all efforts must be made to give strict instructions to keep the lines functional 24 x 7. Level-II has been experiencing frequent disconnection.
7. The literature from all the participating departments must be made available to Level-I to keep them abreast of the departmental activities regularly.

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