Study No. 149

# Decision-Oriented Information Systems for Farmers: *A Study of Kisan Call Centres (KCC), Kisan Knowledge Management System (KKMS), Farmers Portal and M-Kisan Portal in Assam*

*Study Sponsored by the **Ministry of Agriculture and Farmers' Welfare**, Government of India, New Delhi*

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**Assam Agricultural University, Jorhat**
**Assam, 2017**

Assam Agricultural University, Jorhat - 785013, Assam

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**Coordinated by-**
**Centre for Management in Agriculture (CMA),**
**Indian Institute of Management, Ahmedabad**
**(IIMA)**

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**2017**

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# PREFACE

The present study entitled, "Decision-Oriented Information Systems for Farmers: A Study of Kisan Call Centres (KCC), Kisan Knowledge Management System KKMS), Farmers Portal and M-Kisan Portal in Assam" was undertaken at the instance of the Ministry of Agriculture and Farmers' Welfare, Government of India. The study was co-ordinated by the Centre for Management in Agriculture, Indian Institute of Management, Ahmedabad. The comments on the draft report were obtained from the Co-ordinating Centre and incorporated in the final report.

The Kisan Call Centre, Guwahati was established in 2004 covering all the North Eastern States namely Arunachal Pradesh, Assam, Manipur, Meghalaya, Mizoram, Nagaland and Tripura. The basic objective of the Call Centre was to provide for supplying correct answers to various queries/problems related to agriculture and allied sectors, in local languages. The functionaries of the KCC continue to address the farmer's problems from 6 am to 10 pm every day round the year since its inception.

The study was based on both primary and secondary level data. The reference period of the study pertained to 2015-16 and 2016-17. The primary data were collected from two districts (Kamrup (Rural) and Sivasagar). Altogether, the study covered 100 sample farmers, of which, 80 samples were KCC users and 20 were non-users.

The study shows that the sample farmers in the State of Assam continued to receive valuable suggestions/information on various issues pertaining to crop cultivation per favour of KCC, Guwahati. While taking suitable farming decisions, the impact of KCC was particularly realized in the areas of pest control, fertilizer/feed application, weed control, variety selection, input purchase, disease control and weather/rainfall related problem areas and as such, its continuance was strongly recommended by the farmers with renewed vigour and support from the Government.

The present study is a joint output of the AER Centre, Jorhat. Special mention may be made of Dr. Ranjit Borah who endeavored his best in bringing out this report and he really deserves appreciation. The names of other research staff associated with this study have been mentioned elsewhere in the report. The valuable suggestions received from Dr. Jotin Bordoloi in preparing the report are also duly acknowledged. I am grateful to Dr. A. Saikia, Professor and Web Master, AAU for designing the cover page of the report. I am thankful to the Supervisor and the FTAs of the KCC, Guwahati for their help and co-operation.

The findings of the study, I believe, will be useful to the students, researchers and to those who are involved in planning and policy-formulation.

(Anup Kr. Das)
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AERC for NE India, Jorhat

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# Lists of Abbreviation

| | |
|---|---|
| ICT | Information and Communication Technology |
| KCC | Kisan Call Centre |
| KKMS | Kisan Knowledge Management System |
| FTA | Farm Tele Advisor |
| ICAR | Indian Council of Agricultural Research |
| SAU | State Agricultural Universitie |
| KVK | Krishi Vigyan Kendra |
| CSC | Common Service Centre |
| DLDO | District Level Designated Officer |
| SLDO | State Level Designated Officers |
| NeGP-A | National e-Governance Plan – Agriculture |
| USSD | Unstructured Supplementary Service Data |
| IVRS | Interactive Voice Response System |
| NARP | National Agriculture Research Project |
| NER | North Eastern Region |
| CMA | Centre for Management in Agriculture |
| IIMA | Indian Institute of Management, Ahmedabad |
| MIS Report | Management Information System Report |
| DAC | Department of Agriculture and Cooperation |
| OBC | Other Backward Communities |
| SC | Scheduled Caste |
| ST | Scheduled Tribe |
| CCTV | Closed Circuit Television |
| AAU | Assam Agricultural University |
| IKSL | IFFCO Kisan Sanchar Limited |

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# Executive Summary

Agriculture plays a significant role in Indian economy. More than 72 per cent of the rural populations are engaged in agriculture and its allied activities, providing food security to the entire nation. As such, the importance of agriculture shall always be there in India with lot many challenges to feed the growing population. To manage the farm successfully, the farmers generally require relevant information on technical, operational and economic issues relating to improved farming. These help them to make correct decisions on various critical matters such as what crop to grow, the variety to use, the inputs to apply, practices to follow *etc*. for the maximum productivity and returns. With rapid development and scientific progress, the number of choices available and the knowledge-base of agriculture have increased manifold, thereby making decision-process more difficult during recent years.

To overcome the aforesaid problems, the Kisan Call Centres (KCCs) were established in 2004 covering all the states of India. It is reported that about 144 Call Centre agents are engaged in 25 KCCs for answering farmers' queries in 22 major local dialects from 6.00 am to 10.00 pm on all 7 days a week. The KCC services are available countrywide by dialing a single toll free number 1551 and 1800-180-1551 (from 13$^{th}$ February, 2009).

The KCC, in this part of the country was established in Guwahati, Assam covering all the North Eastern States namely Arunachal Pradesh, Assam, Manipur, Meghalaya, Mizoram, Nagaland and Tripura. The basic objective of the call centre was to provide for supplying correct answers to various queries/problems related to agriculture and allied sectors. The farmers can ask queries in their own local languages like Assamese, Bengali, Garo, Khasi, Nagamis, Manipuri, Adi, Mizo *etc.*

Kisan Call Centre agents, known as Farm Tele Advisors (FTAs) (Level-I) used to respond to the farmers' queries instantly. They are all graduates or above in Agriculture or allied fields and have excellent communication skills in respective local language. The queries which cannot be answered by Level-I agent are transferred to higher level experts *i.e.* Level-II in a call conferencing mode. These experts are Subject Matter Specialists of State Development Departments, ICAR or State Agricultural Universities. Further, if a farmer is not fully satisfied, his problem is recorded and sent for a solution to Level-III, the highest level, *i.e*. the Nodal Officers of the Centre.

The new plan documents released by the DAC on May 1, 2012, insisted on to have an efficient and effective KCC Service system based on an active database. Accordingly, it was regularly updated (through experts serving in research and extension system) for each NARP Zone to enhance successful call inflow by the end of 12$^{th}$ Five Year Plan to such an extent that at least one third of the cultivators call KCCs once in a year on an average. This would necessitate substantive increase in seats in the KCCs with matching improvement of IT infrastructure. In this backdrop, the present study was undertaken with the following objectives:

## Objectives of the Study

The major objectives of the study are to examine:

1. The organizational setup, infrastructure, information and communication technology (ICT), and system used, information content management, methods and information flows, types and abilities of the manpower involved and the governance of the system.
2. The record of the use of the system – the profile and patterns of the users, the use made of the system including the number and nature of the calls and other means of communications and the response given.
3. The performance of the systems from the point of view of the farmers / users including the ease and usefulness of the systems, the decision-making and information needs of the farmers and the extent to which these are solved, what they want and what they get.
4. How the system can be improved to make them more effective in serving the farmers thereby enhancing farm performance, livelihoods and boosting the agriculture sector.

## Methodology

The study was conducted by the Agro-Economic Research Centre for N. E. Region, Jorhat in Assam with the Centre for Management in Agriculture, Indian Institute of Management, Ahmedabad as co-ordinating unit in consonance with the guidelines of the Ministry of Agriculture and Farmers Welfare, Government of India. The study was based on both secondary and primary level data. The State and the Districts level secondary data on number of calls registered in KCC were downloaded from the MIS Report, Ministry of Agriculture and Farmers Welfare, Government of India.

The primary level data were collected in 3 (three) different stages through 3 (three) sets of specially designed questionnaires. In the first stage, data on profile and history of development of the KCC in the State, hardware and software profiles, internet connectivity, assessment of

information and knowledge sources, websites use for information sources, other office equipment/infrastructure facilities and manpower at the KCC were collected from the Supervisor of the KCC with the help of a set of State Level Questionnaire.

In the second stage, the FTAs of the KCC were interviewed personally and data were collected on their personal profiles like age, educational level, experiences, *etc.* In addition, opinions on hardware and software profiles, internet connectivity, assessment about information and knowledge, websites use for information sources, assessment of call efficiency, infrastructure availability and training provisions of the KCC system were obtained through FTA Questionnaire.

In the third stage, based on different criteria *i.e.* agro-climatic diversity and activity levels of the KCC system used, 2 (two) districts of Assam, namely, Kamrup district (Rural) from Lower Brahmaputra Valley Zone and Sivasagar district from Upper Brahmaputra Valley Zone were selected.

In the next stage, the name, address and contact numbers of the farmers were downloaded from the MIS Report for the years 2015-16 and 2016-17 for each of the selected districts. After obtaining the lists of KCC users/farmers, some villages were selected depending upon the availability of KCC users/farmers.

After the selection of the villages, the KCC users/farmers were selected randomly depending upon the number of calls they made to the KCC *i.e.* more then 5 (five) times in a year. The total size of the samples include 80 (eighty) KCC users/farmers and 20 (twenty) KCC non-users/farmers drawn from respective villages for both the districts. Thus, a total of 100 (one hundred) samples were selected covering both KCC user and non-user farmers.

The field level data were collected with the help of a set of specially designed questionnaires through personal interview method. Information on the socio-economic profile of the sample households, land use and cropping pattern, sources of information/advice on farming, type of ICT devices used, quantum of calls made to the KCC, decision-making and information needs, some positive and negative comments on the KCC, *etc.* were obtained from the individual farmers/users. Adequate attention was also paid to select and include the KCC user as well as non-user farmers of different farm size groups based on operational land holdings and also different social groups in the sample.

## Reference Period

The data incorporated in this report pertain to the years 2015-16 and 2016-17.

## Findings of the Study

The KCC, Guwahati covers seven North Eastern States and as many as thirty (30) numbers of agricultural graduates and post graduates were employed at the call centre to give suitable answers to the queries of the farmers. About 30.00 per cent of the FTAs serving in the KCC had past experiences of working with the line departments. The FTAs are well convergent with the local languages like Assamese, Bengali, Garo, Khasi, Nagamis, Manipuri, Adi, Mizo *etc.*

The educational profile of the sample KCC farmers/users was satisfactory and the sample farmers mostly belonged to others/general category and OBC. The SC and ST community were very limited. It was also observed that majority of the sample KCC farmers/users belonged to the age-group of 18-50 years.

Overall educational status of the sample non-user farmers was also satisfactory but higher educational attainment was limited. Majority of the non-user sample farmers belonged to others/general category and OBC category and were within the age-group of 18-50 years.

From the records, it was envisaged that the efficiency of the KCC unit has increased manifold since its inception in 2004. Ability to respond to the farmers questions together with the equipments in place (both hardware and software) had undergone marked changes during the interim period. With enhanced knowledge base and better equipments, the FTAs were found to handle/manage the farmers' calls 16 hours a day with rapt attention and dedication. Over and above the online materials, they used to procure study materials like extension booklet, books and papers from the market on their own to address the issues raised by the farmers. However, they were not happy with certain questions relating to technological innovations, status of implementation of Government schemes and price and market issues.

Except for occasional disturbance in internet connectivity and space problem in the office premises, the FTAs were satisfied with the discharge of their duties.

The functionaries at the KCC mostly visit the websites like KKMS, Agricultural University Portal and Accuweather for reference. Other websites occasionally (50.00 per cent) used by the Centre included Farmer's Portal and AgMarket.

There was no report of call escalation either to the Level – II or Level – III experts in the study area. All the queries were answered from the available data base. Majority of the FTAs were quick enough in responding to the farmers' calls to the best of their capabilities. The FTAs had sufficient knowledge of improved agricultural technology and were capable of answering the farmer's questions by themselves.

Further, no field inquiry was conducted by the KCC on its own. It was also observed that Government scheme related information was not updated on regular basis. So far as call efficiency is concerned, a large majority of the FTAs (70.00 per cent) reported it to be good enough in the KCC.

Further, majority of the FTAs opined that the hardware was good enough for the work requirements. It was also recorded that at times, some calls get dropped or mishandled by the software and the existing software occasionally failed to check the repeated irrelevant calls. The internet service was reported to be slow when there was heavy call load in the Centre.

The Directorate of Extension Education, Assam Agricultural University, Jorhat was reported to be functioning as member of the Working Team of the KCC Nodal Cell for NER. This Directorate is regularly providing technology backstopping to the KCC Level-I and Level-II experts through imparting training programmes during *rabi* and *kharif* season to enrich their knowledge. In addition to this, the IKSL was also providing training to the FTAs for updating their knowledge on hardware as well as software.

A significant number of calls were received daily (200 to 300) by the FTAs which they addressed properly and normally maintained cordial relationships with the farmers.

At overall level, the usefulness of the KCC was reiterated by the FTAs especially in the interest of the farmers in particular and the State agriculture in general.

In view of its continuous endeavour to help the farmers without loss of much time and energy, all the FTAs recommended continuance of the Scheme with renewed support from the Government.

The findings of the study (Farmers' Survey) show that 100.00 per cent of the sample farmers were well aware of the activities of the KCC and they usually asked questions on different issues like, what crop to plant, the variety to use, the inputs to apply, the insecticides/pesticides to use, appropriate practices to follow *etc*. in different crop season. In

addition, KVKs, meetings and demonstrations and agricultural experts also played significant roles in providing information/advice on farming practices.

It was further observed that out of the total sample farmers, 68.75 per cent farmers used internet from their mobile phones, usually to look for weather report and other information. No other ICT devices like Broadband/Wi-Fi, Landline, STD/PCO, Computer *etc.* were reported in the study area. Thus, the uses of ICT Devices/Features by the farmers in respect of crop cultivation in the state were limited. Further, Radio, Newspapers/magazines and T.V. were also important sources of information/awareness for the farmers in the state. It was noted that the sample farmers were not aware of different websites like KKMS, Farmers Portal, M-Kisan Portal *etc*.

The sample farmers observed that it was easy to connect with the KCC the toll free number. Therefore, 32.50 per cent of the sample farmers made queries very frequently, 52.50 per cent made queries frequently and the remaining 15.00 per cent of the sample farmers made queries occasionally. About 70.00 per cent of the sample farmers reported that the call handling efficiency was good enough and the information provided to them was also good and useful for the farmers.

However, the sample farmers were not fully satisfied with the information provided by the KCC, particularly on price and market related questions and the Government scheme related questions.

The study also shows that majority of the sample farmers used to receive valuable suggestions/advices from the KCC, which helped them to take right kind of decisions for their crop cultivation. As a result, the farmers were benefited significantly. On the other hand, the non-user sample farmers remained deprived of such valuable suggestions/advices from the KCC. The entire lot of non-user sample farmers reported that they were not aware of the activities or roles of the KCC, for which they were not registered with the Call Centre.

It was pointed out that no other agency or department in the state communicates directly with the farmers and provide solutions to their problems instantly and as such, the KCC scheme should be continued in the interest of the farming community of the State.

## Constraints identified

The study has sufficiently established that the KCC is providing valuable suggestions/advices to the farmers on technical, functional and economic matters, to take right

kind of decision for their farms. Yet, there exist problems and difficulties encountered by different stakeholders in course of programme implementation. Noteworthy problems are enumerated here in under.

- **Inadequate infrastructure support**

  Providing a good ambience is a must to attain higher efficiency in any organization. In that sense, inadequate working space, poor fixture and furnishing, slower internet connectivity, call dropping and occasional failure of the software to prevent irrelevant calls and abusive languages were identified as major infrastructural shortcoming.

- **Lack of field/practical exposure**

  Lack of field/practical exposure in respect of the FTAs was considered as another hindrance for the farmers. Field visits or field tour programme by the FTAs are not covered under the KCC scheme. Most of the agro-chemicals insecticides/pesticides as suggested by the FTAs were not available in the local markets. Hence, the farmers were to move from one place to another, looking for the same and in the process, sizeable amount of money, time and energy go wasted.

- **Lack of co-ordination among the different departments of the State Government and with the KCC**

  There were no co-ordination among the different line Departments of the State Government and also with the KCC and hence, some information lying with other departments were lost in transit or were delayed in reaching the client.

- **Lack of regular training for the FTAs**

  The training programmes for the FTAs were not being arranged on regular basis. The training programme, whenever arranged were mostly restricted to classroom only, and no field exposure was given to the FTAs. Further, subject specific trainings and training on programmes implementation of Government schemes were very much lacking.

- **Lack of regular updates of the Government scheme related information**

  The Government scheme related issues, particularly, price and market information were not regularly updated by the Government officials. So, it was difficult on the part of the KCC functionaries to provide the required information to the farmers on time.

- **Permanency the KCC scheme and contractual appointment**

  The KCC scheme has not yet been declared as a permanent scheme by the Government, although the scheme is functioning very successfully since January, 2004. The

policies of contractual appointment and low salary were considered to be the major drawbacks of the KCC system as perceived by the Call Centre staff. Therefore, there was always a tendency of job-hopping among the staff members. They used to leave the job immediately after getting an opportunity of regular absorption.

## Recommendations and Policy Implication

On the basis of findings of the study, the following suggestions are offered, expecting that such measures, it taken in right prospective may improve the decision-making process and ultimately benefit the KCC users with higher productivity. The concerned Departments of the Central and State Government can accordingly adopt appropriate policy measures for further necessary action.

- **Improvement of infrastructural facilities**

  The problem of inadequate space in the activity room and poor fixture and outdated/un-useable furnishers are to be well taken care of by management to create an ambience for better performance. Moreover, providing up-to-date and modern Software programmes, Video Surveillance and Broadband/Wi-Fi has become essential for efficient discharge of the jobs by the KCC functionaries. Further, all the extension booklets, books and papers should be supplied by the office free of cost to the staff. Thus, strengthening of the infrastructural support services can invigorate the activities of the KCC.

- **Requirement of Technical Training for the FTAs**

  The FTAs are the principal agents who ensure active participation of the KCC users/farmers at the grass root level. It is therefore essential to train them at regular interval to keep abreast of the changing situation. The training should be subject specific and also it should highlight the status of implementation of various Government schemes. Along with the classroom training, field visits are considered equally important for them. Publicity regarding the activities of the KCC among the farmers is highly desirable.

- **Strengthening of the Database for market, price and Government scheme related information**

  The State Government may arrange to disseminate demand and price information on regular basis through websites and other media to make the farmers aware of different market situation and prevailing prices. The Government scheme related information should also be updated mandatorily for the benefits of all the stakeholders.

- **Working hours of the KCC may be changed**

  It was noted that most irrelevant calls with abusive languages were received after 8.00 pm. At the same time, the farmers were found to engage themselves in their farms activities up to 8.00 am. That may be the reason why, limited numbers of calls were registered in the KCC prior to 8 am. So, there is every scope of changing the timing of the KCC from 8.00 am to 8.00 pm.

- **Co-ordination among different line departments of the State Government**

  Lack of co-ordination among the line Departments was considered to be a major problem for KCC functionaries, although the KCC is rendering yeoman's services to the farmers of Assam. As such, in the interest of the farming community; ensuring co-ordination among the different Departments of the State Government and also with the KCC is considered most essential.

- **Kisan Call Centre may be declared as permanent scheme**

  Kisan Call Centre, Guwahati is one of the most important Call centres catering to the needs of the farmers of entire NER. It has been providing workable solutions to many of the pressing problems encountered by the farmers' instantly. As such, the KCCs may be declared as a permanent scheme of the Government of India under the Department of Agriculture and Farmers' Welfare.

- **The existing policies of contractual appointment may be removed**

  Considering the nature of job and dedication of the KCC personnels, the existing policy of contractual appointment in the KCC may be done away with and all eligible benefits may be extended to them as that of regular employees.

## Conclusion

Kisan Call Centre was established in January 2004 at Guwahati, Assam covering entire North Eastern Region. The intention was to use all possible means of information and communication technology to respond to the farmers' queries and concerns in local languages. Considering the importance of the KCC, 30 (thirty) numbers of agricultural graduates and post graduates were employed at the call centre as FTAs, to supply the answers to the farmers' queries, and in case, they are unable to tackle the problem, they are at their liberty to refer the queries to the experts at the next higher levels.

Since inception, the KCC personnels are providing valuable suggestions/advices to the KCC users/farmers for upliftment of agriculture in the form of giving solutions to different problems on the spot. The findings of the study have clearly demonstrated that variety selection decisions, input purchase decisions, fertilizer/feed application decisions, weather/rainfall related decisions, crop management decisions, insect/pest control decisions, disease control decisions and weed control decisions constitute the major decision-making process, for which the sample farmers usually look forward to the KCCs. And over the years, the KCC is becoming more and more popular among the farmers' with lots of positive impact all around.

By and large, the KCC, Guwahati is serving a large chunk of farmers of the entire N.E. Region by providing them with the required information on improved agriculture, encompassing all technical, operational and economic issues. Inspite of a number of limitations inherent to the system, the KCC programme should continue to serve the farmers with ennobling policy support and generous funding from the Government.

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# CHAPTER - I

## Introduction and Background

Agriculture plays a significant role in Indian economy. More than 72 per cent of the rural populations are engaged in agriculture and its allied activities, providing food security to the entire nation. As such, the importance of agriculture shall always be there in India with lot many challenges to feed the growing population. The focused attention is on improving the method of production backed by appropriate technology. To manage the farm successfully, the farmers need adequate information on technical, operational and economic matters. This helps them to make correct decisions on various critical issues such as, what crop to plant, the variety to use, the inputs to apply, practices to follow *etc*. for higher productivity and returns. With rapid development and scientific progress, the number of choices available and the knowledge-base of agriculture have widened enormously, making decision process more complicated and difficult in recent years. Moreover, market liberalization, globalization and climate change are posing new challenges in markets and agro-climatic environment, thereby significantly increasing the risks and making the consequences of wrong decision more severe.

Farmers' livelihood depend largely on the decisions they take and therefore on the information available to them. The extension systems which were supposed to play a leading role in informing and advising the farmers are under severe stress due to lack of funds and in-adequate manpower and are therefore unable to deliver the deliverables. So, the farmers do not have full access to the latest information and advice. Deciding on incomprehensive information obtained from input dealer may often lead to imperfect decisions, which ultimately result in poor crop yield, and even crop failure and eventually farmer suicides. Therefore it is imperative to provide best information and knowledge not only for the farmers but also for the interest of the agriculture sector at large. In this regard, to harness the potential of ICT in agriculture, the Department of Agriculture, Corporation and Farmer's Welfare, Ministry of Agriculture and Farmers Welfare, Government of India took a new initiative by launching of KCCs, KKMS, Farmers Portal and M-Kisan Portal. These initiatives have started yielding results since 2004 by using the marvels of ICT for the benefits of farming community. The present study aims at examining the organizational set-up, implementation and performance of the agencies associated with this great endeavor.

## 1. Kisan Call Centres

The Kisan Call Centres provide agriculture related information to the farming community through toll free telephone lines. A countrywide common eleven digit number 1800-180-1551 has been allotted for Kisan Call Centre. The number is accessible through all mobile phones and landlines of all telecom networks. Replies to the farmers' queries are given in all the major local languages of the country. Calls are attended from 6.00 am to 10.00 pm on all seven days of the week at each KCC location.

Kisan Call Centre agents, known as FTAs are considered as Level-1 agents who respond to the farmers' queries instantly. The FTAs are graduates or above (*i.e.* PG or Doctorate) in Agriculture or allied disciplines (Horticulture, Animal Husbandry, Fisheries, Poultry, Bee-keeping, Sericulture, Aquaculture, Agricultural Engineering, Agricultural Marketing, Bio-technology, Home Science etc. offered by Agricultural/Horticultural/ Veterinary Universities) and they possess excellent communication skills in respective local language. The queries which cannot be answered by Level-I agents are transferred to higher level experts *i.e*. Level-II in a call conferencing mode. These experts are Subject Matter Specialists of State Development Departments, ICAR and State Agricultural Universities, sitting in a specified place in the State. If in case the farmer is not fully satisfied, his problem would be recorded, solved at Level-III at the highest level at the Nodal Centre and he will get further advice through post or by visit of extension worker. The services would be available round the clock. While during the working hours there would be immediate response, but beyond working hours and on holidays, the call would be recorded and the queries answered later or by post.

It is reported that about 144 Call Centre agents are engaged in 25 KCCs for answering farmers' queries in 22 major local dialects from 6.00 am to 10.00 pm on all 7 days a week. All KCC locations are accessible countrywide by dialing a single toll free number 1551 and 1800-180-1551 (from 13$^{th}$ February 2009). The number of calls registered in KCCs since inception (January 2004) are presented in Table 1.1. The Figure-1.1 clearly indicates that there was an upward trend in the number of calls registered at Kisan Call Centres since its inception till March 2017. The compound growth rate was worked out at 26.82 per cent which is quite impressive.

**Table 1.1**
**Year wise number of calls received in the KCCs since inception in India (Jan.2004 to March 2017)**

| Sl. No. | Year | Number of Calls (in lakh) |
|---|---|---|
| 1 | 2003-04 | 2.21 |
| 2 | 2004-05 | 6.48 |
| 3 | 2005-06 | 5.95 |
| 4 | 2006-07 | 6.02 |
| 5 | 2007-08 | 5.90 |
| 6 | 2008-09 | 6.23 |
| 7 | 2009-10 | 9.28 |
| 8 | 2010-11 | 20.44 |
| 9 | 2011-12 | 15.41 |
| 10 | 2012-13 | 26.74 |
| 11 | 2013-14 | 44.43 |
| 12 | 2014-15 | 47.96 |
| 13 | 2015-16 | 57.81 |
| 14 | 2016-17 | 61.49 |
| Compound Growth Rate (%) | | 26.82 |

Note ; 2004 (Jan. to March)
Source: Call Statistics, MIS Report.

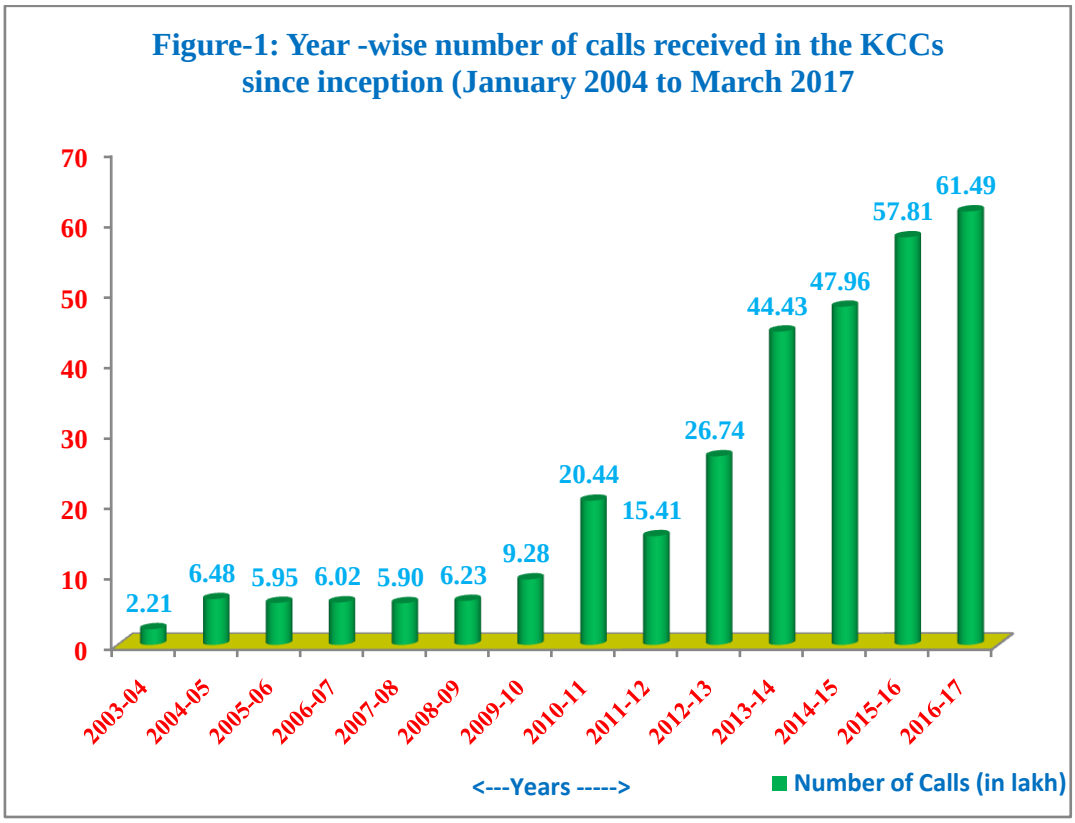

**Table 1.2**
**State wise number of calls registered under Kisan Call Centres (KCCs) and Kisan Knowledge Management System (KKMS) in India 2016-17**

**(Figures in numbers)**

| Sl. No. | States/Uts | KCC Calls Registered | Rural Population | Calls per Lakh Rural Population |
|---|---|---|---|---|
| | | 2016-17 | '000 | 2016-17 |
| 1 | Andaman and Nicobar Island | 424 | 244 | 174 |
| 2 | Andhra Pradesh | 349,908 | 56,312 | 621 |
| 3 | Arunachal Pradesh | 986 | 1,069 | 92 |
| 4 | Assam | 37,012 | 26,781 | 138 |
| 5 | Bihar | 241,689 | 92,075 | 262 |
| 6 | Chhattisgarh | 59,182 | 19,604 | 302 |
| 7 | Dadra and Nagar Haveli | 8 | 183 | 4 |
| 8 | Delhi | 32,044 | 419 | 7,648 |
| 9 | Goa, Daman Diu | 288 | 612 | 47 |
| 10 | Gujarat | 233,081 | 34,671 | 672 |
| 11 | Haryana | 318,012 | 16,531 | 1,924 |
| 12 | Himachal Pradesh | 64,003 | 6,168 | 1,038 |
| 13 | Jammu and Kashmir | 84,468 | 9,135 | 925 |
| 14 | Jharkhand | 28,958 | 25,037 | 116 |
| 15 | Karnataka | 288,608 | 37,553 | 769 |
| 16 | Kerala | 22,011 | 17,456 | 126 |
| 17 | Lakshadweep | 4 | 14 | 29 |
| 18 | Madhya Pradesh | 578,298 | 52,538 | 1,101 |
| 19 | Maharashtra | 770,765 | 61,545 | 1,252 |
| 20 | Manipur | 1,883 | 1,900 | 99 |
| 21 | Meghalaya | 1,329 | 2,369 | 56 |
| 22 | Mizoram | 105 | 529 | 20 |
| 23 | Nagaland | 309 | 1,407 | 22 |
| 24 | Odisha | 351,098 | 34,951 | 1,005 |
| 25 | Punjab | 273,523 | 17,317 | 1,580 |
| 26 | Rajasthan | 685,493 | 51,540 | 1,330 |
| 27 | Sikkim | 1,058 | 456 | 232 |
| 28 | Tamil Nadu and Puducherry | 275,354 | 37,584 | 733 |
| 29 | Tripura | 5,297 | 2,710 | 195 |
| 30 | Uttar Pradesh | 1,273,761 | 155,111 | 821 |
| 31 | Uttarakhand | 38,936 | 7,026 | 554 |
| 32 | West Bengal | 131,472 | 62,214 | 211 |
| | India | 6,149,367 | 833,061 | 738 |

Source: (1) Call Statistics, MIS (Report, Ministry of Agriculture and Farmers Welfare, Govt. of India.
(2) Population Census Report, 2011.

The Table 1.2 presents the number of calls registered under KCCs across the states in 2016-17 together with the rural population of the country. The Table shows that the highest

numbers of calls were registered in Delhi (7,648) and the lowest figure was recorded in Dadra and Nagar Haveli (4) against per lakh of rural population. In respect of Assam, the figure stood at 138 per lakh of rural population during 2016-17. Obviously, position of Assam in this endeavor is not that encouraging as compared to many other states of the country.

However, the KCC call escalation process has been restructured from April 2011 onwards, which now involves (i) State Agricultural Department right from the Block to the State level, (ii) State Agricultural Universities and (iii) Krishi Vigyan Kendras. When the KCC agent fails to answer the farmer's queries, the expert from these organizations are connected by way of conference call. In addition to this, active involvement of the CSCs and other stakeholders has also been envisaged. In the revised plan, Level-II of the escalation process is at the Block Level and hence, it is necessary to have at least one expert in each of the specialized area in every Block. Decentralization to the block and district level requires identification of one officer in each sector at the block and district levels. The DLDOs in each district needs to be enabled by SLDOs. The farmers can also visit the CSCs to get the answer to their queries. The CSCs may either answer the query by providing relevant websites or escalate the query to the higher levels as in the case of KCC. The CSCs can also upload photograph along with description of the problem if the farmers comes with some sample of affected crops. Queries registered at the CSCs go through the similar escalation matrix. The database of farmers' queries made at CSCs is also available at KCCs and vice-verse. As such, all stakeholders have direct access to the knowledge database, KKMS web-site (www.dackkms.gov.in) by simply clicking on the 'Kisan Login' to search for desired information available on the web-site for their use. Thus, a KCC agent can also give solutions to a CSC query by making a phone call to the farmer.

## 2. Kisan Knowledge Management System

The KKMS has been developed to give correct, consistent and quick answers to the queries of the farmers by putting therein validated information on Agriculture and allied sectors of all the States. The KKMS is an independent web site, in which all data are recorded from State level to Block level against different crops and topics. The web site includes database on Package of Practices on Agriculture, Horticulture, Animal Husbandry, Fishery and Sericulture for all the States. The KCC agents working at different KCC locations all over the country have the access to this web site through their specific user ID and Pass-Word provided to them.

Whenever a farmer calls at KCC location by dialing the toll free number 1800-180-1551 and raises a query, the KCC agent, apart from using his own knowledge/experience and consultation of printed literature from concerned State Department of Agriculture/State Agriculture University or Government of India guidelines, may access to the KKMS for the information asked for by the farmer and pass on the correct answer to him immediately. Thus, the KKMS maintains a strong database of all the registered farmers, the queries raised by them and also the answers provided to them.

## 3. Farmer's Portal – One Stop Shop for Farmers

Farmer's Portal (www.farmer.gov.in) is a centralized knowledge base created for the benefits of the farmers. There are more than 800 websites and 80 applications/portals in different departments under the central and state governments. However, there was not a single portal exclusively for the farmers. The Farmer's Portal is an initiative in this direction to create one stop shop for meeting all informational needs relating to agriculture and allied sectors. Once in the Farmer's Portal, a farmer will be able to get all important information on specific subjects around his village/block/district or state enabled through a map of India placed on the home page. This information can also be delivered in the form of text, SMS, email and audio/video in the language of farmer's choice. In the Portal, the farmers can ask specific questions and give valuable feedback through the response module.

## 4. M-Kisan Portal – Mobile Based Service for Farmers

Considering the popularity of the Farmer's Portal (of which SMS Portal is an integral part) a new third level domain has been created for all mobile based services for farmers on an integrated Portal which is known as M-Kisan Portal (www.mkisan.gov.in). Under the NeGP-A, different modes of delivery of e-enabled services have been envisaged. These include internet, touch screen kiosks, agri-clinics, mass media, Common Services Centre, Kisan Call Centres, and integrated platforms in the departmental offices together with physical outreach and extension personnel equipped with pico-projectors and hand hold devices. The M-Kisan Portal was inaugurated by the Honorable President of India on July 16, 2013 and since then nearly 92 billion SMSs have been sent to the farmers throughout the length and breadth of the country up to 2015. These messages are specific to farmers' needs and significance at a particular point of time. The M-Kisan SMS Portal thus can be a potent tool to reach the farmers more effectively.

Almost all the Government departments, office and other organizations from the Ministry Headquarters to the block level have been authorized to use this portal to give the

required information to the farmers on a wide range of issues. Moreover, USSD, IVRS and Pull SMS are other value added services which have enabled farmers and stakeholders not only to receive broadcast messages but also to get web based services on their mobile without having internet. Semi-literate and illiterate farmers are also targeted to be reached by voice messages. A key objective of this initiative is to make SMS and other mobile based services a tool of 2-way communication in which information/advisory services are provided as per need in a broadcast mode and farmer can also raise specific queries through KCC, Pull SMS or USSD.

As per the new plan, effective from May 1, 2012, the DAC aims at to have an efficient, effective Kisan Call Centre Service based on an active database and regularly updated knowledge base (through experts in research and extension system) for each NARP Zone to quickly enhance successful call inflow by the end of 12$^{th}$ Five Year Plan to such an extent that at least one third of the cultivators call KCCs once in a year on an average. This will necessitate substantial increase in seats in the KCCs and communicating IT infrastructure.

## 5. Review of Literature on IT Based Information Systems for Farmers

The Situation Assessment Survey 2013, though not strictly comparable, highlighted the importance of farmers-to-farmers exchange of information in Indian agriculture. Traditional and modern ICT (newspapers, radio, television and internet) have also assumed much significance as a source of information for the farmers. At all India level, 41 per cent of cultivating households accessed technical information from many sources during the reference period (July-December 2012). Around 10 per cent of cultivating households accessed technical help from extension workers, KVKs, State Agricultural University and other public extension agencies (NSSO, 2014).

Bachhav (2012) conducted a study in Maharashtra and observed that the majority of the farmers sought for information on availability of seeds (74 per cent), crop production (71 per cent), fertilizers (65 per cent) and insecticide availability (62 per cent). Other areas mentioned by the farmers were water management (34 per cent), weather information (23 per cent) and agricultural equipment (18 per cent). Similar findings were found by Meitei and Devi (2009), who conducted a study in Manipur State and observed that most farmers sought for information on crop production and availability of seeds and fertilizers. Babu *et.al.* (2012) carried out a study and reported that the most important information need for paddy farmers

in Tamil Nadu were related to disease and pest management, pesticides and fertilizer application.

Another study conducted in Uttar Pradesh by Reardon *et,al*. (2011) observed that public sector extension system, as a source of intervention, (State extension staff, KVKs, university extension *etc*.) collectively covered 25 per cent of the farmers. In Madhya Pradesh, 37 per cent of the farmers were served by the State extension staff (Reardon *et,al*. (2011). Other major sources of extension services for farmers in Madhya Pradesh were radio and television (21 per cent) and KVKs (12 per cent). Private sector constituted 25 per cent of all information sources.

Sharma *et.al.* (2011) presented a paper on "Role of Kisan Call Centres in Hill Agriculture" and observed that KCC are effective in hill agriculture where extension services outreach is difficult. Kant and Pandey (2011) conducted a study on KCC calls and showed that according to the data, farmers faced major problem in pest management in *kharif* crops in the months of September to January of the year. Kaushal (2015) observed that KCC system is facing some problems as there are no coordination between the Government departments and the KCC. As a result, the latest market and other required information are sometimes not available in KCC and hence lack of faith among the farmers.

Berra (2014) showed that calls to KCC increase when there is drought in the country and due to shortage of staff many calls at KCC are unanswered. Therefore, it indicates that a major portion of households are still not very familiar to the technology and may be left out.

Chandra, Kumar and Sharma (2011) conducted a study on per month calls received at the KCC of the Indian Society of Agribusiness Professionals in Bhopal. The study showed that majority of calls was for agriculture, followed by horticulture and the livestock. The calls for agriculture were on plant protection, production techniques, HYV seeds, marketing and weather report. The study reported that farmers sometimes have problems following recommendations due to difficult scientific language used and the non-availability of suggested inputs in the local market. The study also indicated that information provided should be best suited to local farming system and specifically indicate input availability status. Similar study conducted by Rediff-News (2007) and Khanal (2015) also observed that farmers face problems in accepting the difficult technological solutions conveyed by the KCC centres.

Kaushal, (2015) observed that about 78.84 per cent of the callers have questions connected to agriculture, while only 0.83 per cent have question related to animal husbandry

and 0.32 per cent relates to fisheries. Horticulture related queries form 19.99 per cent of the total calls.

From the experiences, it can be observed that the Kisan Call Centre based extension service can be more effective in delivering knowledge and information exactly as per the necessities of the farming community. This system records what is being delivered to the farmers in terms of knowledge and information.

## 6. Scope of the Study

Transfer of appropriate technology in farmers' field bears much significance for agricultural development. The existing network of extension machineries are under tremendous pressure due to changing situation, resulting from structural changes in land holding pattern, ever growing population and resource crunch. In this backdrop, information technology can provide workable solution to most of the problems faced by the farming community. For quick transmission of technology and latest technical updates, and also to resolve the farmers' problems, the Kisan Call Centre was established in Guwahati, Assam in January, 2004 covering the entire North-Eastern States. The intention was that a farmer will contact the call centre in his/her State (the KCC serves from 6.00 am to 10.00 pm every day) by dialing a toll free number and seek answers to his/her problems.

The North Eastern Region is characterized by limited technical manpower, poor transport and communication facilities, limited financial support to the technology transfer process and inadequate infrastructure facility and hence the farmers of the region used to face great difficulties. Due to non-availability of improved technological information to the farming families, agriculture exhibits low and unstable productivity in the region.

However, the entire North-Eastern Region possesses huge natural resources which are yet to be tapped for development. The present functional literacy rate amongst the farming families and the presence of regional institutions like Kisan Call Centre and Kisan Knowledge Management System in the region can be well utilized for hastening the process of development. So, it is expected that application of ICT in agriculture will help to faster the socio-economic development of the farming community.

It is apparent from the secondary sources that the farmer's call to the KCC, Guwahati was highest in the State of Assam in comparison to other States of the Region. The Table 1.3 shows that 83.62 per cent of the total calls in the year 2014-15 were recorded from Assam. The corresponding figures for the years 2015-16 and 2016-17 stood at 74.49 and 78.80 per cent respectively.

**Table 1.3**
**State wise Cumulative Call Statistics Report for the North Eastern Region for the years 2014-15, 2015-16 and 2016-17**

**(Figures in number)**

| States of NER | 2014-15 | | 2015-16 | | 2016-17 | |
|---|---|---|---|---|---|---|
| | Total Call | Per cent | Total Call | Per cent | Total Call | Per cent |
| Arunachal Pradesh | 471 | 0.91 | 1,493 | 2.59 | 1,032 | 2.20 |
| Assam | 43,235 | 83.62 | 42,889 | 74.49 | 37,013 | 78.80 |
| Manipur | 1,764 | 3.41 | 2,602 | 4.52 | 1,904 | 4.05 |
| Meghalaya | 798 | 1.54 | 1,992 | 3.46 | 1,312 | 2.79 |
| Mizoram | 644 | 1.25 | 983 | 1.71 | 105 | 0.22 |
| Nagaland | 375 | 0.73 | 486 | 0.84 | 329 | 0.70 |
| Tripura | 4,415 | 8.54 | 7,128 | 12.38 | 5,278 | 11.24 |
| Total | 51,702 | 100.00 | 57,573 | 100.00 | 46,973 | 100.00 |

Source: MIS Report, Ministry of Agriculture and Farmers Welfare, Government of India.

## 7. Agriculture in Assam

Agriculture is considered as the mainstay of the economy of Assam and plays a vital role in the socio-economic transformation of the state. As per 2011 census, the majority of the population (86.00 per cent) is living in the rural areas and more than 70.00 per cent of total population is drawing their livelihood from agriculture and allied sectors. Therefore, agriculture occupies a very important place in the economy of the state and provides employment to a large chunk of population.

The soil, topography, climate and rainfall in Assam are quite suitable for growing rice crop, which occupies about 71.00 per cent of the total gross cropped area and more than 90 per cent of the area is under food grains. The main food crops grown in Assam are rice, maize, pulses, potato, and other root crops. The principal cash crops include tea, jute & mesta, oilseeds, sugarcane etc. Crop cultivation is solely dependent on vagaries of monsoon as the status of irrigation facilities is very poor.

## 8. Objectives of the Study

The objectives of the present study are to examine the structure, design, implementation, and performance of the Kisan Call Centre, Kisan Knowledge Management System, Farmers Portal and M-Kisan Portal and see their efficiency in providing information and guidance to the farmers to help them in taking decisions and deriving solution to the problems in farming to the extent possible, leading to improved performance of their farms and the agriculture sector as a whole. More specifically, it will seek to examine:

1. The organizational setup, infrastructure, information and communication technology (ICT), and systems used, information content management, methods and information flows, types and abilities of the manpower involved and the governance of the system.
2. The record of the use of the systems - the profile and patterns of the users, the use made of the system including the number and nature of the calls and other means of communications and the responses given.
3. The performance of the systems from the point of view of the farmers/users including the ease and usefulness of the systems, the decision-making and information needs of the farmers and the extent to which these are served, what they want and what they get.
4. How the system can be improved to make them more effective in serving the farmers thereby enhancing farm performance, livelihoods and boosting the agriculture sector.

## 9. Methodology

The present study was conducted by the Agro-Economic Research Centre for North-East India, Jorhat under the guidance of the Centre for Management in Agriculture, Indian Institute of Management, Ahmedabad and was confined to the State of Assam as decided by the Ministry of Agriculture and Farmers Welfare, Government of India. The study was based on both secondary and primary level data. The State and the Districts level secondary data on number of calls registered in KCC were downloaded from the MIS Report, Ministry of Agriculture and Farmers Welfare, Government of India (www.dackkms.gov.in).

As per methodology, the primary level data were collected in 3 (three) different stages through 3 (three) sets of specially designed questionnaires. In the first stage, data on profile of KCC, history of development of KCC in the state, hardware and software profiles, internet connectivity, assessment of information and knowledge sources, use of websites for information sources, other office equipment/infrastructure facilities, manpower at the KCC and some positive and negative comments on the KCC were collected from the Supervisor of KCC, Guwahati Centre.

In the second stage, the Farm Tele Advisors of the KCC were interviewed personally and collected the data on their personal profiles like age, educational level, experiences, etc. In addition, opinions on hardware and software profiles, internet connectivity, assessment about information and knowledge, websites use for information sources, assessment of call efficiency, infrastructure availability, training provisions and some comments on existing system of KCC, were obtained through FTA questionnaire by personal interview method.

In the third stage, based on agro-climatic diversity and activity levels of the KCC system used, 2 (two) districts of Assam, namely, Kamrup district (Rural) from Lower

Brahmaputra Valley Zone (highest KCC system users) and Sivasagar district from Upper Brahmaputra Valley Zone (second highest KCC system users (answered calls)) were selected for the study. District-wise and zone-wise calls received for the period from 2015-16 and 2016-17 are indicated in Table 1.4 and Figure-1.2.

Afterwards, to identify the KCC users/farmers, "Call and Caller Details" from the MIS Report for the years 2015-16 and 2016-17 were downloaded for each selected district. After obtaining the KCC users/farmers lists some villages were selected depending upon the availability of KCC users/farmers. Details of distribution of sample households by Taluka/Blocks and Villages under Kamrup District (Rural) and Sivasagar District are presented in Table 1.5 (a) and Table 1.5 (b) respectively.

After selecting the villages, the KCC users/farmers were selected randomly depending upon their quantum of calls made to the KCC. For the study, the farmers who made queries for more than 5 (five) times a year were purposively selected. The total size of the samples were 80 (eighty) KCC users/farmers and 20 (twenty) non-users/farmers which were drawn from the selected villages of both the districts. Thus, a total of 100 (one hundred) samples were selected covering both KCC user and non-user farmers for the study.

The field level data were collected with the help of a set of specially designed questionnaires through personal interview method. Information on the socio-economic profile of the sample households, land use and cropping pattern, sources of information/advice for farming, type of ITC devices used, quantum of calls to the KCC, decision-making and information needs and comments on KCC *etc.* were obtained from the individual farmers/users. Adequate attention was also paid to select and include the KCC user as well as non-user farmers from different farm size groups, based on operational land holdings and social grouping.

It was reported by the official sources that majority of the calls received from the farmers were related to agriculture proper and allied sectors. Most of the calls were asked with reference to insect pest control decisions, disease control decisions, weed control decisions, fertilizer/feed application, variety selection decisions, input purchase decisions, weather/rainfall related information, crop management decisions, Government schemes related information, price and market related information *etc.* during *kharif* and *rabi* season of the year.

**Table 1.4**

**District-wise call details in Assam**

**(Figures in number)**

| Sl. No. | Districts Name | Region (Agricultural Zones) | Years | |
|---|---|---|---|---|
| | | | 2015-16 | 2016-17 |
| 1 | Baksa | Lower Brahmaputra Valley Zone | 1,083 | 975 |
| 2 | Barpeta | Lower Brahmaputra Valley Zone | 1,999 | 1,761 |
| 3 | Bongaigaon | Lower Brahmaputra Valley Zone | 576 | 629 |
| 4 | Cachar | Barak Valley Zones | 663 | 541 |
| 5 | Chirang | Lower Brahmaputra Valley Zone | 273 | 200 |
| 6 | Darrang | North Bank Plain Zone | 1,834 | 1,621 |
| 7 | Dhemaji | North Bank Plain Zone | 1,402 | 1,461 |
| 8 | Dhubri | Lower Brahmaputra Valley Zone | 1,409 | 1,490 |
| 9 | Dibrugarh | Upper Brahmaputra Valley Zone | 2,365 | 1,791 |
| 10 | Goalpara | Lower Brahmaputra Valley Zone | 881 | 659 |
| 11 | Golaghat | Upper Brahmaputra Valley Zone | 2,721 | 2,088 |
| 12 | Hailakandi | Barak Valley Zones | 169 | 140 |
| 13 | Jorhat | Upper Brahmaputra Valley Zone | 2,534 | 1,995 |
| **14** | **Kamrup (R)** | **Lower Brahmaputra Valley Zone** | **3,320** | **2,706** |
| 15 | Kamruo (M) | Lower Brahmaputra Valley Zone | 185 | 212 |
| 16 | Karbi-Anglong | Hill Zones | 595 | 552 |
| 17 | Karimgang | Barak Valley Zones | 373 | 250 |
| 18 | Kokrajhar | Lower Brahmaputra Valley Zone | 210 | 225 |
| 19 | Lakhimpur | North Bank Plain Zone | 2,278 | 1,949 |
| 20 | Morigoan | Central Brahmaputra Valley Zone | 1,440 | 1,478 |
| 21 | Nagaon | Central Brahmaputra Valley Zone | 2,895 | 2,336 |
| 22 | Nalbari | Lower Brahmaputra Valley Zone | 1,091 | 806 |
| 23 | N.C. Hills | Hill Zones | 22 | 27 |
| **24** | **Sivasagar** | **Upper Brahmaputra Valley Zone** | **3,211** | **2,372** |
| 25 | Sonitpur | North Bank Plain Zone | 1,664 | 1,509 |
| 26 | Tinsukia | Upper Brahmaputra Valley Zone | 1,238 | 958 |
| 27 | Udalguri | North Bank Plain Zone | 535 | 499 |
| Total | | | 36,966 | 31,230 |

Source: MIS Report, Ministry of Agriculture and Farmers Welfare, Government of India.

**Figure-1.2: District-wise call details in Assam**

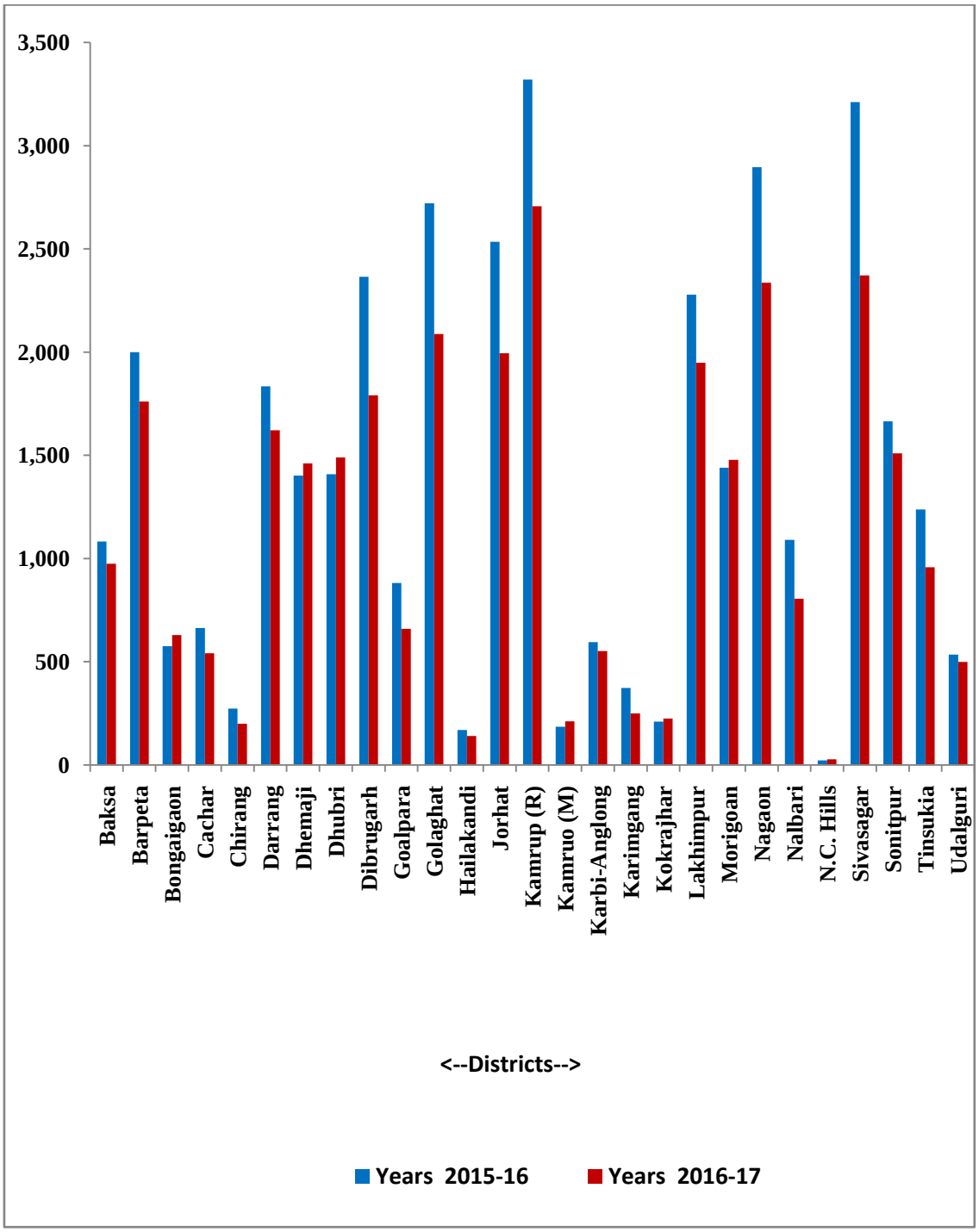

**Table 1.5 (a)**

**Distribution of sample households of Kamrup District (Rural) of Assam by Taluka/Blocks and Villages**

**(Figures in number)**

| Kamrup District (Rural)- Assam | | | | |
|---|---|---|---|---|
| Taluka | Village | Users | Non- Users | Total |
| Bezera | Bonmaza | 1 | 2 | 3 |
| | Nahira | 1 | 0 | 1 |
| | Khudra Palash | 3 | 0 | 3 |
| Sualkuchi | Singimari | 2 | 0 | 2 |
| Hajo | Abhoipur | 1 | 0 | 1 |
| | Ramdia Vjankuri | 1 | 2 | 3 |
| | Santipur | 2 | 1 | 3 |
| | Satdola | 3 | 0 | 3 |
| | Ujankuri | 4 | 0 | 4 |
| Rongia | Alagdia | 4 | 2 | 6 |
| | Kothora | 6 | 1 | 7 |
| | Gotia Khth | 2 | 0 | 2 |
| | Hariandab | 1 | 0 | 1 |
| Bihdia Jajikona | Borghuli | 1 | 0 | 1 |
| | Hindu Moijuli | 1 | 0 | 1 |
| | Dumuni Chocki | 7 | 2 | 9 |
| Total | | 40 | 10 | 50 |

Source: Primary Survey.

Further, as reported by the Supervisor of the KCC, Guwahati, maximum calls were recorded during the month of November (3,177 nos.), followed by December (3,013 nos.), February (2,991 nos.), January (2,948 nos.), October (2,924 nos.) March (2,897 nos.), April (2,803 nos.), August (2,696 nos.) and September (2,591 nos.) 2016 of the year.

**Table 1.5 (b)**
**Distribution of sample households of the Sivsagar District of Assam by Taluka/Blocks and Villages**

**(Figures in number)**

| Sivsagar District- Assam | | | | |
|---|---|---|---|---|
| Taluka | Village | Users | Non- Users | Total |
| Demow | Kenduguri gaon | 1 | 0 | 1 |
| | Dihajan | 1 | 1 | 2 |
| | Gorbhanga | 5 | 1 | 6 |
| | 1 No. Konwar gaon | 6 | 5 | 11 |
| | Sukan Pukhuri | 1 | 0 | 1 |
| | Mazgaon | 3 | 0 | 3 |
| | Netai Pukhuri | 1 | 0 | 1 |
| | Dheraiguri | 1 | 0 | 1 |
| | Bokota Sonapur | 1 | 0 | 1 |
| | Masjid Gaon | 1 | 0 | 1 |
| | Sunpura | 1 | 0 | 1 |
| | Dandkhulia | 1 | 0 | 1 |
| | Kenduguri | 1 | 0 | 1 |
| Amguri | Sripuria | 5 | 1 | 6 |
| | Bakhuwa | 1 | 0 | 1 |
| | Konwar gaon | 2 | 0 | 2 |
| | 2 No. Gayan Gaon | 1 | 1 | 2 |
| Gaurisagar | Votiapar | 4 | 0 | 4 |
| | Vitorual | 1 | 0 | 1 |
| Khelua | Khanikar | 1 | 1 | 2 |
| Sapangni | Rajabari Gaon (Namti) | 1 | 0 | 1 |
| Total | | 40 | 10 | 50 |

Source: Primary Survey.

## 9. Reference Period

The data incorporated in this report pertain to the years 2015-16 and 2016-17.

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# CHAPTER - II

## Data and Profiles of the Kisan Call Centre, Farm Tele Advisers (FTAs) and KCC Users and Non-Users

As per guidelines of the Department of Agriculture and Cooperation of the Government of India, Kisan Call Centre was established in January 2004 at Guwahati, Assam covering entire North Eastern Region. The intention was to use all possible areas of information and communication technology to respond of the farmers' queries and concerns in local languages. A farmer under the scheme could contact the call centre in his/her State (open from 6 am to 10 pm) by dialing a toll free number and ask for answers to his/her problems. Agricultural graduates employed at the call centre were to supply the answers, and in case, if they are unable to tackle the problem, they can refer to the query to the experts at the next higher levels.

This chapter deals with gender profile, education, subjects of specialization, experiences, *etc*. of the FTAs of the KCC Guwahati. Moreover, some important socio-economic characteristics like education, age, caste, *etc.* of the sample KCC users as well as non-users farmers are incorporated in this chapter.

Table 2.1 indicates the gender profile of the FTAs of the KCC, Guwahati. The Table reflects that out of total FTAs, 80.00 per cent were males and 20.00 per cent were females.

**Table 2.1**
**Gender profile of FTAs surveyed**

| Gender | Number | Per cent |
|---|---|---|
| Male | 24 | 80.00 |
| Female | 6 | 20.00 |
| Total | 30 | 100.00 |

Source: Primary Survey.

The educational status of the FTAs is presented in Table 2.2. It is observed from the Table that all the FTAs were graduates and post graduates in Agriculture and allied disciplines. It is seen from the Table that out of the total FTAs, a major portion *i.e*. 63.33 per cent of FTAs were Bachelor's Degree holders and 36.67 per cent of FTAs were Master's Degree holders. Higher educational attainment had added advantage in adoption of new ICT as well as for quick transmission of technical updates to the farmers, for resolving their problems.

**Table 2.2**
**Education profile of FTAs surveyed**

| Degree | Number | Per cent |
|---|---|---|
| B.Sc. Agriculture | 10 | 33.33 |
| B.F.Sc (Fishery) | 4 | 13.33 |
| B.V.Sc. & A.H. | 5 | 16.67 |
| M.Sc. Agriculture | 11 | 36.67 |
| Total | 30 | 100.00 |

Source: Primary Survey.

Subjects of specialization have great significance for the FTAs in the context of identification of farmer's problems as well as their remedies. The areas of specialization of the FTAs included Extension Education (10.00 per cent), Plant Pathology (10.00 per cent), Veterinary Science (16.67 per cent), Fishery Science (13.33 per cent), Agronomy (10.00 per cent), Agricultural Economics (16.67 per cent), Entomology (6.67 per cent), Plant Protection (3.33 per cent), Horticulture (3.33 per cent), Crop Physiology (3.33 per cent) and Seed Science and Technology (3.33 per cent). The details of specializations are presented in Table 2.3.

**Table 2.3**
**Stated subjects of specialization of FTAs surveyed**

| Subjects | Number | Per cent |
|---|---|---|
| Extension Education | 3 | 10.00 |
| Plant Pathology | 3 | 10.00 |
| Veterinary Science | 5 | 16.67 |
| Fishery Science | 4 | 13.33 |
| Agronomy | 3 | 10.00 |
| Agricultural Economics | 5 | 16.67 |
| Entomology | 2 | 6.67 |
| Plant Protection | 1 | 3.33 |
| Plant Biotechnology | 1 | 3.33 |
| Horticulture | 1 | 3.33 |
| Crop Physiology | 1 | 3.33 |
| Seed Science and Technology | 1 | 3.33 |
| Total | 30 | 100.00 |

Source: Primary Survey.

The status of work experiences in respect of FTAs are presented in Table 2.4. The Table reflects that out of the total FTAs, only 30.00 per cent of FTAs had work experiences in the field of agriculture and allied sectors and a major portion *i.e.* 70.00 per cent of FTAs were newly appointed with no past experience in the line.

**Table 2.4**
**FTAs with work experience**

| Opinion | Number | Per cent |
|---|---|---|
| Yes | 9 | 30.00 |
| No | 21 | 70.00 |
| Total | 30 | 100.00 |

Source: Primary Survey.

The educational status of the sample KCC farmers/users were classified by different educational attainment level and are presented in Table 2.5. It is observed from the Table that there were 62.50 per cent farmers with higher secondary education, 26.25 per cent farmers with college level education, 7.50 per cent farmers with primary education and only 3.75 per cent were post graduation degree holders. It is evident from the Table that the educational attainment level was satisfactory across the study area.

**Table 2.5**
**Education profile of the farmers (KCC user) sample**

| Education Level | Per cent |
|---|---|
| Post Graduation | 3.75 |
| College | 26.25 |
| Higher Secondary | 62.50 |
| Primary | 7.50 |
| Illiterate | 0.00 |
| Total | 100.00 |

Source: Primary Survey.

The sample KCC farmers/users were classified according to the different caste categories and is shown in Table 2.6. The sample farmers mostly belonged to others/general category and OBC. It was found that out of the total sample farmers, 41.25 per cent belonged to the others/general caste, 41.25 per cent belonged to OBC, 13.75 per cent belonged to SC and the rest 3.75 per cent of sample farmers belonged to the ST community.

Distribution of the sample farmers according to the age-group is presented in Table 2.7. It is evident from the Table that majority of the sample farmers (60 per cent) belonged to the age-groups between 18-29 years and 30-39 years. It is seen from the Table that 26.25 per cent of the sample farmers belonged to the age-group of 40-49 years and the rest 13.75 per cent belonged to the age-group of 50-59 years.

The educational profile of the sample non-user farmers are classified by different level of educational attainment and are presented in Table 2.8. It is found from the Table that, among the non-users, there were 40.00 per cent farmers with primary education, 40.00 per cent with higher secondary level of education and only 20.00 per cent farmers had college level education.

**Table 2.6**
**Caste profile of the sample farmer (KCC users) sample**

| Caste | Per cent |
|---|---|
| Others/General | 41.25 |
| OBC | 41.25 |
| ST | 3.75 |
| SC | 13.75 |
| Total | 100.00 |

Source: Primary Survey.

**Table 2.7**
**Age profile of the sample farmers (KCC users)**

| Age Group | Number | Per cent |
|---|---|---|
| 18-29 | 24 | 30.00 |
| 30-39 | 24 | 30.00 |
| 40-49 | 21 | 26.25 |
| 50-59 | 11 | 13.75 |
| 60-69 | 0 | 0.00 |
| 70 and Above | 0 | 0.00 |
| Total | 80 | 100.00 |

Source: Primary Survey.

The sample non-user farmers were classified according to the different caste categories and are presented in Table 2.9. The sample farmers mostly belonged to others/general category and OBC category. It is observed from the Table that out of the total sample farmers, 50.00 per cent belonged to the others/general caste, 45.00 per cent belonged to OBC category and rest 5.00 per cent of the sample farmers belonged to the Scheduled Caste community.

The sample non-user farmers were classified by different age-groups and it is presented in Table 2.10. It is observed from the Table that out of the total sample farmers, 10.00 per cent belonged to the age-group of 18-29 years, 40.00 per cent belonged to the group of 30-39 years, 35.00 per cent belonged to the age-group of 40-49 years and the rest 15.00 per cent belonged to the age-group of 50-59 years.

**Table 2.8**
**Education profile – non-users**

| Education | Per cent |
|---|---|
| Post-Graduation | 0.00 |
| College | 20.00 |
| Higher Secondary | 40.00 |
| Primary | 40.00 |
| Illiterate | 0.00 |
| Total | 100.00 |

Source: Primary Survey.

**Table 2.9**
**Caste profile of the sample non-users farmers**

| Caste | Per cent |
|---|---|
| Others/General | 50.00 |
| OBC | 45.00 |
| ST | 0.00 |
| SC | 5.00 |
| Total | 100.00 |

Source: Primary Survey.

**Table 2.10**
**Age profile farmers (non-users)**

| Age Group | Frequency | Per cent |
|---|---|---|
| 18-29 | 2 | 10.00 |
| 30-39 | 8 | 40.00 |
| 40-49 | 7 | 35.00 |
| 50-59 | 3 | 15.00 |
| 60-69 | 0 | 0.00 |
| 70 and Above | 0 | 0.00 |
| Total | 20 | 100.00 |

Source: Primary Survey.

## Summing-up

As per guidelines of the Department of Agriculture and Cooperation of the Government of India, agricultural graduates and post graduates were employed as Farm Tele Advisers in the Kisan Call Centre, Guwahati to supply the answers to the farmers about their queries/problems related to the crops, seeds, fertilizers, commodity prices, pesticides, horticulture, veterinary, fishery, *etc.* covering all the areas of agriculture and allied sectors. Only 30.00 per cent of the FTAs had past work experiences in the line departments.

The educational profile of the sample KCC farmers/users was satisfactory and the sample farmers mostly belonged to others/general category and Other Backward Communities category. Scheduled Caste and Scheduled Tribe community were very limited.

It was also observed that majority of the sample KCC farmers/users belonged to the age-group of 18-50 years.

Overall educational status of the sample non-user farmers was satisfactory but higher educational attainment was limited in the sense that there were only 20.00 per cent farmers with college level education. It was also observed that majority of the sample farmers belonged to others/general category and OBC category. Also, the majority of the sample non-user farmers belonged to the age-group of 18-50 years.

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# CHAPTER - III

## Results: Kisan Call Centre – Centre Survey

This chapter presents the profile of KCC, history of development of KCC in the state, hardware and software profiles, internet connectivity, assessment of information and knowledge sources, websites use for information sources, other office equipment/ infrastructure facilities, manpower at the KCC and some positive and negative comments on KCC.

The KCC was established in Guwahati, Assam covering seven North Eastern States namely, Arunachal Pradesh, Assam, Manipur, Meghalaya, Mizoram, Nagaland and Tripura. The basic objective was to help the farmers of the entire North Eastern Region through resolution of their queries/problems related to agriculture and allied sectors over telephone. The farmers can ask question in local languages like Assamese, Bengali, Garo, Khasi, Nagamis, Manipuri, Adi, Mizo, *etc.* from 6.00 am to 10.00 pm every day by dialing a toll free number (1800-180-1551). Thirty (30) numbers of agricultural graduates and post graduates were employed as FTA at the call centre to respond to the queries of the farmers. Detailed profile of KCC, Guwahati is shown in Table 3.1.

**Table 3.1**
**Profile of Kisan Call Centre, Guwahati**

| | |
|---|---|
| States Covered | Arunachal Pradesh, Assam, Manipur, Meghalaya, Mizoram, Nagaland & Tripura. |
| Languages Used | Assamese, Bengali, Garo, Khasi, Nagamis, Manipuri, Adi & Mizo |
| Number of FTAs | 30 |

Source: Primary Survey.

Initially, the Kisan Call Centre was established at Bora Service (G.S Road), Guwahati in January 2004. After 8 (eight) years of continuous service provided by the KCC from the Bora Service, the Centre was shifted to the Ulubari, Guwahati, in 2012. Again, the centre was relocated to Rukmini gaon, IFFCO Building (G.S.Road), Guwahati during 2013. Since then the KCC is serving the farmers from that location till date. The history of development of Kisan Call Centre at Guwahati is presented in Table 3.2. The table shows that there were 14 numbers of FTAs in the first location, 24 numbers of FTAs in the second location and 30 numbers of FTAs in the third location.

Present hardware profile of the KCC is presented in Table 3.4. The table indicates that there are altogether 18 (eighteen) numbers of personal computers, 16 (sixteen) numbers of headphones, 1 (one) printer and only 1 (one) scanner. It is observed from the table that all the

**Table 3.2**
**History of development of Kisan Call Centre**

| | Location | | |
|---|---|---|---|
| | 1st | 2nd | 3rd |
| Year of Start/relocation | 2004 Bora Service, Guwahati | 2012 Ulubari, Guwahati | 2013 Rukmini gaon, IFFCO Building, Guwahati |
| Number of FTAs/ KCC Agents | 14 | 24 | 30 |

Source: Primary Survey.

For comparative analysis of past and present equipments, the relevant data were collected from the Supervisor of KCC through the rating scales *viz.* strongly agree *i.e.* 5, agree *i.e.* 4, partially agree *i.e.* 3, disagree *i.e.* 2 and strongly disagree *i.e.* 1 and the results are presented in Table 3.3. It is evident from the Table that all the equipments like hardware, software, internet connectivity, including the ability to respond to farmer's calls are far better than the past as reported by the Supervisor with a rating of 5 for all parameters.

**Table 3.3**
**Comparison of present and past KCC**

| | Strongly Agree | Agree | Partially Agree | Disagree | Strongly Disagree |
|---|---|---|---|---|---|
| Better Hardware/equipment | 5 | - | - | - | - |
| Better Software | 5 | - | - | - | - |
| Better Connectivity | 5 | - | - | - | - |
| Better farmer database | 5 | - | - | - | - |
| Better ability to respond farmers calls | 5 | - | - | - | - |

Ratings: Strongly Agree-5, Agree-4, Partially Agree-3, Disagree-2 and Strongly Disagree-1.
Source: Primary Survey.

equipments are well up-to-date as reported by the Supervisor with a rating of 5 for all equipments.

The software profile of KCC is shown in Table 3.5. The table shows that there are 3 (three) types of call handling software namely, Agent Opens cape Contact Centre, Opens cape Desktop and Real Time Viewer in KCC, fascination. It is obvious from the Table that all the call handling software are well up-to-date as reported by the Supervisor with a rating of 5 (strongly agree) for all.

Overall hardware ratings are presented in Table 3.6. The table shows overall comments on functioning of the hardware (computers support). The observations like it can handle call load, mouse works well and fulfills requirements were agreed to by the Supervisor with a rating of 4 in scale of 5. On the other hand, comments like the existing

**Table 3.4**
**Present hardware profile**

| | *Type* | *No.* | *Rating* |
|---|---|---|---|
| PC's | HP Compaq 8200 ELITE | 16 | 5 |
| | Lenovo Think Centre (Edge) | 1 | 5 |
| | Samsung Sync Master SA 100 | 1 | 5 |
| Headphones | JABRA | 8 | 5 |
| | VONIA | 8 | 5 |
| Printers | Laser Jet - M1216 nfh MFP | 1 | 5 |
| Scanners | Laser Jet - M1216 nfh MFP | 1 | 5 |

Ratings: Strongly Agree-5, Agree-4, Partially Agree-3, Disagree-2 and Strongly Disagree-1.
Source: Primary Survey.

**Table 3.5**
**Present software profile**

| Call Handling Soft wares | Available | Rating |
|---|---|---|
| Agent Opens cape Contact Centre | OTCPEV70R1.47.26 | 5 |
| Opens cape Desktop | OSCC80R1G04client.msp | 5 |
| Real Time Viewer | OSCC80R1G04client.msp | 5 |

Ratings: Strongly Agree-5, Agree-4, Partially Agree-3, Disagree-2 and Strongly Disagree-1.
Source: Primary Survey.

computer does not breakdown frequently and interface of key board and mouse is good were partially agreed to (3) by the Supervisor. From the ratings, it can be said that there are some difficulties in the hardware functioning.

**Table 3.6**
**Overall hardware ratings**

| | Strongly Agree | Agree | Partially Agree | Disagree | Strongly Disagree |
|---|---|---|---|---|---|
| It can handle call load | - | 4 | - | - | - |
| Does not breakdown frequently | - | - | 3 | - | - |
| Interface of Key board and mouse is good | - | - | 3 | - | - |
| Mouse works well | - | 4 | - | - | - |
| Fulfills Requirements | - | 4 | - | - | - |

Ratings: Strongly Agree-5, Agree-4, Partially Agree-3, Disagree-2 and Strongly Disagree-1.
Source: Primary Survey.

The overall software ratings are placed in Table 3.7. The functioning of the software was noted by the Supervisor based on certain parameters. Accordingly, he strongly agreed to the observation like calls can be handled easily. The Supervisor further conveyed that the software was efficient enough to handle heavy call traffic and was capable of meeting all other requirements. A rating of 3 (partially agree) out of 5 was assigned by him on the issues, like availability of adequate data base for answering the queries, frequent crashing of the software and call drop or mishandling by the software. As such, it can be said that there was ample scope of improving the software.

**Table 3.7**
**Overall software ratings**

| | Strongly Agree | Agree | Partially Agree | Disagree | Strongly Disagree |
|---|---|---|---|---|---|
| Calls can be handled easily | 5 | - | - | - | - |
| Calls does not get dropped, or mishandled by the software | - | - | 3 | - | - |
| Heavy call traffic can be handled | - | 4 | - | - | - |
| Adequate database for answering questions | - | - | 3 | - | - |
| Software does not frequently crash | - | - | 3 | - | - |
| Software meet the requirements | - | 4 | - | - | - |

Ratings: Strongly Agree-5, Agree-4, Partially Agree-3, Disagree-2 and Strongly Disagree-1.
Source: Primary Survey.

Internet connectivity is the most essential part of the system to run day-to-day the works by the KCC functionaries. Detailed ratings on internet connectivity are presented in Table 3.8. The table indicates that the connectivity was fast enough for retrieving and recording information (rating 4 *i.e.* agreed to). However, the Supervisor was partially agreed to the statement like connectivity was adequate for work; it did not breakdown frequently; it was fast enough to respond to the calls and during heavy call load; the connectivity did not slow down *etc.* Thus, it can be said that the internet connectivity in the system is reasonably good enough to support the regular jobs of the KCC.

The infrastructures or the office equipments of the KCC are shown in Table 3.9. There were 8 (eight) numbers of Air Conditioners, 1 (one) CCTV Camera, 1 (one) Drinking Water Facility and 2(two) Washroom Facility in the KCC premises. However, no facility was available for arrangement of Lunch/Dinner to the KCC functionaries in the office.

**Table 3.8**
**Internet connectivity**

| | Strongly Agree | Agree | Partially Agree | Disagree | Strongly Disagree |
|---|---|---|---|---|---|
| During heavy call loads, internet does not slow down | - | - | 3 | - | - |
| Fast enough to respond calls | - | - | 3 | - | - |
| Fast enough for retrieving & recording information | - | 4 | - | - | - |
| Does not frequently breakdown | - | - | 3 | - | - |
| Adequate for work | - | - | 3 | - | - |

Ratings: Strongly Agree-5, Agree-4, Partially Agree-3, Disagree-2 and Strongly Disagree-1.
Source: Primary Survey.

While rating the infrastructure, the Supervisor reported that there was adequate ventilation in the KCC premises and no disturbances were encountered from any other departments. Sufficient activity area was there to take up the jobs in right earnest. However,

the Supervisor could not fully agree with the observations like facing no disturbances while other FTAs were attending calls or overall working environment was good enough. Lack of sufficient Video Surveillance was also reported by him. Details of infrastructure rating are shown in Table 3.10.

**Table 3.9**
**Infrastructure/office equipments**

| Facilities | No. |
|---|---|
| No. of ACs Installed | 8 |
| No. of CCTV Cameras | 1 |
| Drinking Water Facility | 1 |
| Washroom Facility | 2 |
| Lunch/Dinner Facility | - |

Source: Primary Survey.

**Table 3.10**
**Infrastructure rating**

| | Strongly Agree | Agree | Partially Agree | Disagree | Strongly Disagree |
|---|---|---|---|---|---|
| Sufficient Activity Area | - | 4 | - | - | - |
| No disturbance while other FTA are attending call | - | - | 3 | - | - |
| Adequate Ventilation | 5 | | - | - | - |
| Sufficient Video Surveillance | - | - | - | - | 1 |
| No disturbance from other departments | 5 | - | - | - | - |
| Overall good working environment | - | - | 3 | - | - |

Ratings: Strongly Agree-5, Agree-4, Partially Agree-3, Disagree-2 and Strongly Disagree-1.
Source: Primary Survey.

Efficiency of the FTAs is considered to be the most important element in answering the farmer's questions. Detailed assessment of FTAs efficiency in the form of rating is indicated in Table 3.11. The Table indicates that the FTAs were capable to answering the calls efficiently (rating strongly agree *i.e.* 5), and commended sufficient knowledge and capability to answer the questions (rating strongly agree *i.e.* 5). The FTAs were also capable of satisfactorily answering the farmers questions (rating strongly agree *i.e.* 5) and possessed good discipline and regular attendance and punctuality (rating strongly agree *i.e.* 5) as observed by the Supervisor. He further reported that the FTAs were quick in responding to the calls by accessing the database/information for answering the questions. All the FTAs were well motivated and overall performance of the FTAs was good enough (scale of ratings is 4). Also, the FTAs at time took the help of their colleagues to answer the questions and took good initiative to improve, innovate and perform better. The FTAs were well trained and hardly escalate the calls to higher levels to answer the questions as observed by the Supervisor.

**Table 3.11**
**Assessment of FTA efficiency**

| | Strongly Agree | Agree | Partially Agree | Disagree | Strongly Disagree |
|---|---|---|---|---|---|
| FTAs are quick in responding to calls | - | 4 | - | - | - |
| FTAs are able to manage the calls efficiently | 5 | - | - | - | - |
| The FTAs have sufficient knowledge & capability to answer questions | 5 | - | - | - | - |
| FTAs are able to quickly access the database/ information to answer questions | - | 4 | - | - | - |
| FTAs often take the help of colleagues to answer questions | - | - | 3 | - | |
| FTAs often escalate to higher levels to answer questions | - | - | - | - | 1 |
| FTAs are able to satisfactorily find answer for the farmers' questions | 5 | - | - | - | - |
| FTAs show good discipline, attendance & punctuality | 5 | - | - | - | - |
| FTAs are well motivated | - | 4 | - | - | - |
| FTAs take good initiative to improve, innovate and perform better | - | - | 3 | - | - |
| FTAs are well trained | - | - | 3 | - | - |
| Overall performance of the FTAs is good | - | 4 | - | - | - |

Ratings: Strongly Agree-5, Agree-4, Partially Agree-3, Disagree-2 and Strongly Disagree-1.
Source: Primary Survey.

Assessment of information and knowledge source and database uses is detailed in Table 3.12. The table reflects that taking the help of internet search for the required information was very frequent (rating 5) in order to give appropriate answers to the queries of the farmers. On the other hand, use of self-knowledge; preparing excel sheets and materials on its own; using extension booklets, books and papers and knowledge acquired during the training were highly useful for answering the farmers questions (rating 4). The FTAs occasionally (rating 3) took help from the colleagues and Supervisor and also from the Government department sources/materials to give appropriate answers. They however, never (rating 1) asked for any help from the University experts/Nodal officer. It is to be noted here that all the extension booklets, books and papers were purchased by the Supervisor and FTAs on their own cost. No such materials were provided to the KCC by the Government.

Assessment of information and knowledge source and database use classified by rating scales is placed in Table 3.13. The table indicates that the FTAs are taking help from the internet search extensively (rating 5 *i.e.* strongly agreed). But, use of self-knowledge,

**Table 3.12**
**Assessment of information and knowledge sources and databases uses**

*(Frequency of use)*

| | Very Frequently | Frequently | Occasion-ally | Rarely | Never |
|---|---|---|---|---|---|
| Self-Knowledge | - | 4 | - | - | - |
| Colleagues and Supervisor | - | - | 3 | - | - |
| Prepared excel sheets & material | - | 4 | - | - | - |
| Internet search | 5 | - | - | - | - |
| Extension Booklets, books and papers | - | 4 | - | - | - |
| Government department sources/material | - | - | 3 | - | - |
| Knowledge acquired in Training | - | 4 | - | - | - |
| University experts/Nodal officer knowledge | - | - | - | - | 1 |
| Information from other farmers | - | - | - | - | 1 |

Ratings: Very Frequently -5, Frequently -4, Occasionally-3, Rarely-2 and Never -1.
Source: Primary Survey.

preparing excel sheets and materials, using extension booklets, books and papers are considered equally important (rating 4). Uses of Government department sources/material and knowledge acquired in the training were limited. (rating 3). As against this, the FTAs did not ask for information from University experts/Nodal officer or from other farmers (rating 1).

Overall assessment of information provided by the KCC as classified by the rating scales are presented in Table 3.14. The table shows that the knowledge, information and data-base available with the KCC was adequate enough and up-to-date answers were provided on weather and general questions and hence, highest rating of 5 (strongly agree) was assigned to these aspects. At the same time, adequate and up-to-date answers were provided on technical questions, Government schemes related questions and price and market related issues with an

**Table 3.13**
**Assessment of information and knowledge sources and databases uses *(Ratings)***

| | Strongly Agree | Agree | Partially Agree | Disagree | Strongly Disagree |
|---|---|---|---|---|---|
| Self-Knowledge | - | 4 | - | - | - |
| Colleagues & Supervisor | - | - | 3 | - | - |
| Prepared Excel sheets & material | - | 4 | - | - | - |
| Internet search | 5 | - | - | - | - |
| Extension Booklets, books, papers | - | 4 | - | - | - |
| Government department sources/material | - | - | 3 | - | - |
| Knowledge acquired in Training | - | - | 3 | - | - |
| University experts/Nodal officer knowledge | - | - | - | - | 1 |
| Information from other farmers | - | - | - | - | 1 |

Ratings: Strongly Agree-5, Agree-4, Partially Agree-3, Disagree-2 and Strongly Disagree-1.

**Table 3.14**
**Overall assessment of information provided**

| | Strongly Agree | Agree | Partially Agree | Disagree | Strongly Disagree |
|---|---|---|---|---|---|
| The knowledge, information and data-base available with you is adequate | 5 | - | - | - | - |
| Adequate & up-to-date answers are provided on technical questions | - | 4 | - | - | - |
| Adequate & up-to-date answers are provided on government schemes related questions | - | 4 | - | - | - |
| Adequate & up-to-date answers are provided on price & market related questions | - | 4 | - | - | - |
| Adequate & up-to-date answers are provided on weather & general questions | 5 | - | - | - | - |
| Overall the farmers seem satisfied with the information provided | - | 4 | - | - | - |

Ratings: Strongly Agree-5, Agree-4, Partially Agree-3, Disagree-2 and Strongly Disagree-1.
Source: Primary Survey.

overall rating of 4 each in a scale of 5. At overall level, the farmers were found to be satisfied with the information provided by the Kisan Call Centre.

Websites are the most important components for successful operationalisation of the KCC. Details of websites used as sources of information by the KCC are shown in Table 3.15. The table shows that Kisan Knowledge Management System, Agricultural University Portal and Accuweather were the mostly used websites as reported by the Supervisor, claiming 100 per cent of the time slab. On the other hand, the websites like Farmer's Portal and AgMarket were used partially (50.00 per cent). However, the websites like I-Kedut Portal and State Seeds Corporation Ltd were not at all used by the KCC, Guwahati as reported by the Supervisor.

**Table 3.15**
**Websites used for information source (usage in percentage of time)**

| Websites | Per cent |
|---|---|
| Farmer's Portal | 50 |
| Kisan Knowledge Management System | 100 |
| AgMarket | 50 |
| Agricultural University Portal | 100 |
| I-Kedut Portal | 0 |
| State Seeds Corporation Ltd | 0 |
| Accuweather | 100 |

Source: Primary Survey.

The status of assessment of KKMS is presented in Table 3.16. The table reflects that KKMS portal response was not fast enough, for which it failed to respond to the question

many a time. However, overall working of the KKMS portal was pretty well as reported by the Supervisor.

**Table 3.16**
**Assessment of KKMS portal**

| | Strongly Agree | Agree | Partially Agree | Disagree | Strongly Disagree |
|---|---|---|---|---|---|
| KKMS portal response is fast enough | - | - | 3 | - | - |
| KKMS portal does not fail to respond or crash during use | - | - | - | 2 | - |
| Overall KKMS portal works well | - | 4 | - | - | - |

Ratings: Strongly Agree-5, Agree-4, Partially Agree-3, Disagree-2 and Strongly Disagree-1.
Source: Primary Survey.

Detailed assessment of the Farmer's Portal is indicated in Table 3.17. The table shows that Farmer's Portal response was not fast enough, so many a time, the website failed to respond to the queries (crash). At overall level, the portal worked well, as reported by the Supervisor.

**Table 3.17**
**Assessment of Farmer Portal Website**

| | Strongly Agree | Agree | Partially Agree | Disagree | Strongly Disagree |
|---|---|---|---|---|---|
| Website response is fast enough | - | - | 3 | - | - |
| Website does not fail to respond or crash during the use | - | - | - | 2 | - |
| Overall the website works well | - | 4 | - | - | - |

Ratings: Strongly Agree-5, Agree-4, Partially Agree-3, Disagree-2 and Strongly Disagree-1.
Source: Primary Survey.

The frequency of call escalation system in KCC is shown in Table 3.18. The table indicates that there was no record of call escalation to Level-II or Level-III at KCC, Guwahati. Whenever there were some difficulties in answering the farmers' questions, the FTAs were guide by their colleagues and supervisor and the appropriate solutions were provided by them only.

The call answering system and its efficiency is indicated in Table 3.19. It is reported by the Supervisor that all the queries raised by the farmers were addressed from the office itself and hence, the call escalation to the higher level (Level-II or Level-III) was not felt necessary during the period of report.

**Table 3.18**
**Call escalation system frequency**

| | Strongly Agree | Agree | Partially Agree | Disagree | Strongly Disagree |
|---|---|---|---|---|---|
| 1. Frequency of Level 1 calls | | | | | |
| Queries not solved by FTA's are answered by colleagues | - | - | 3 | - | - |
| Queries not solved by colleagues are answered by Supervisors | - | - | 3 | - | - |
| Queries not solved by supervisors are escalated to level 2 | - | - | - | - | 1 |
| 2. Frequency of Level 2 calls | | | | | |
| Frequency of calls escalated to level 2 | - | - | - | - | 1 |
| Queries not solved in level 2 are escalated to level 3 | - | - | - | - | 1 |
| 3. Frequency of Level 3 calls | | | | | |
| Frequency of calls escalated to Level 3 | - | - | - | - | 1 |
| Queries are solved at level 3 | - | - | - | - | 1 |

Ratings: Strongly Agree-5, Agree-4, Partially Agree-3, Disagree-2 and Strongly Disagree-1.
Source: Primary Survey.

**Table 3.19**
**Assessing the call answering system its efficiency and effectiveness**

| | Strongly Agree | Agree | Partially Agree | Disagree | Strongly Disagree |
|---|---|---|---|---|---|
| Queries not solved by supervisors are easily escalated to level 2 | - | - | - | - | 1 |
| Level 2 experts speedily attend to the queries | - | - | - | - | 1 |
| Level 2 experts satisfactorily attend to the queries | - | - | - | - | 1 |
| Queries not solved in level 2 are escalated to level 3 | - | - | - | - | 1 |
| Nodal officers respond to farmers by Call/ SMS/Post email | - | - | - | - | 1 |
| Overall the call answering system is adequate | - | - | - | - | 1 |

Ratings: Strongly Agree-5, Agree-4, Partially Agree-3, Disagree-2 and Strongly Disagree-1.
Source: Primary Survey.

The KCC programme was launched with a view to leverage the extensive telecommunication infrastructure in the country to deliver extension services to the farming community through Kisan Call Centres. To facilitate the programme the Directorate of Extension Education under the Assam Agricultural University, Jorhat is serving as member of the Working Team of the KCC Nodal Cell for the North Eastern States. The extension Directorate is regularly providing technology backstopping to KCC Level-I and Level-II experts through imparting training programmes during *rabi* and *kharif* season to enrich their knowledge. The Level-II experts are expected to assist the KCC agents (FTAs) in answering the farmers' queries, when he/she is unable to address in a call conferencing mode.

Overall usefulness of the training programmes meant for the KCC functionaries is shown in Table 3.20. The Table shows that training was highly useful in understanding the call procedure as well as updating of knowledge on crop management during *rabi* and *kharif* season. At the same time, the training programmes also helped a great deal in understanding of the hardware and software used for the purpose. By and large, one can readily find all the trainings to be very useful and adequate.

**Table 3.20**
**Overall assessment of usefulness of training programmes**

| | Strongly Agree | Agree | Partially Agree | Disagree | Strongly Disagree |
|---|---|---|---|---|---|
| Helps in understanding call procedure | 5 | - | - | - | - |
| Helps in operating hardware | - | 4 | - | - | - |
| Helps in operating Software | - | 4 | - | - | - |
| Helps in getting necessary knowledge | - | 4 | - | - | - |
| Helps in updating knowledge | 5 | - | - | - | - |
| Overall training is useful and sufficient | - | 4 | - | - | - |

Ratings: Strongly Agree-5, Agree-4, Partially Agree-3, Disagree-2 and Strongly Disagree-1.
Source: Primary Survey.

Overall status of call handling in the KCC, Guwahati is presented in Table 3.21. The table shows that all calls were handled efficiently by the KCC functionaries and the farmers and FTAs had developed a very good communication channels. A large number of calls were received everyday as per record and the call handling systems was good enough to run the activities in right perspectives. The farmers were found to be satisfied with call handling system adopted by the KCC with an overall rating of 4.

Overall assessment of hardware, software and infrastructure facilities available in the KCC is indicated in Table 3.22. The table shows that the performance of the hardware and software used in the KCC was good enough and helpful for smooth functioning (rating 4). However, the performance of the internet connectivity and the existing infrastructure and service support were found to be working well, with a rating of 3, meaning that there were ample scope of further improvement in terms of performance.

**Table 3.21**
**Overall assessment of call handling**

| | Strongly Agree | Agree | Partially Agree | Disagree | Strongly Disagree |
|---|---|---|---|---|---|
| Large number of calls are received everyday | - | - | 3 | - | - |
| All calls are handled efficiently | - | 4 | - | - | - |
| Call handling system are good | - | - | 3 | - | - |
| Farmer & FTA have good communication | - | 4 | - | - | - |
| Overall the farmers are satisfied with call handling | - | 4 | - | - | - |

Ratings: Strongly Agree-5, Agree-4, Partially Agree-3, Disagree-2 and Strongly Disagree-1.
Source: Primary Survey.

**Table 3.22**
**Overall assessment of hardware, software and infrastructure**

| | Strongly Agree | Agree | Partially Agree | Disagree | Strongly Disagree |
|---|---|---|---|---|---|
| The performance of the hardware used is good & it is helpful | - | 4 | - | - | - |
| The performance of the software used is good & it is helpful | - | 4 | - | - | - |
| The performance of the internet connectivity is good | - | - | 3 | - | - |
| The infrastructure & service support is good | - | - | 3 | - | - |

Ratings: Strongly Agree-5, Agree-4, Partially Agree-3, Disagree-2 and Strongly Disagree-1.
Source: Primary Survey.

Overall assessment of the information and knowledge available with the KCC are depicted in Table 3.23. It was reported by the Supervisor that the information available with the KCC were easy to understand and a large volume of information were made available to the farmers through the system on time. However, not all farmers could process the information at ease and satisfied with the systems (rating 3 out of 5).

Overall assessment of the KCC, Guwahati is presented in Table 3.24. The Table indicates that the performance of the KCC was good enough together with the performance of the Supervisor registering on overall rating of 4. However, towards the KCC policies, there were some reservations as indicated by the Supervisor. It was because of the contractual nature of appointment and low salary paid to the KCC functionaries, for which the system and policies of the KCC were marked as 'somewhat poor'. Overall usefulness of the Kisan Call Centre was reported to be excellent in view of the services it is rendering to the farming community. Going by the functioning of the KCC, Guwahati, it can readily be said that many of the farmers' problems are being addressed instantly without losing much time and energy. As such, in spite of a number of inherent problems in the system, all functionaries of the Centre strongly opined that the KCC should be continued with more vigour and support from the Government.

**Table 3.23**
**Overall assessment of the information and knowledge available**

| | Strongly Agree | Agree | Partially Agree | Disagree | Strongly Disagree |
|---|---|---|---|---|---|
| Information is available on time | - | 4 | - | - | - |
| Information available is easy to understand | 5 | - | - | - | - |
| Farmers can understand and process it easily | - | - | 3 | - | - |
| Farmers seems to be satisfied with the information provided | - | - | 3 | - | - |

Ratings: Strongly Agree-5, Agree-4, Partially Agree-3, Disagree-2 and Strongly Disagree-1.
Source: Primary Survey.

**Table 3.24**
**Overall assessment**

| | Excellent | Good | Satisfactory | Somewhat Poor | Very Poor |
|---|---|---|---|---|---|
| Performance of KCC | - | 4 | - | - | - |
| Own performance at KCC | - | 4 | - | - | - |
| System and policies of KCC | - | - | - | 2 | |
| Usefulness of KCC | 5 | - | - | - | - |
| Opinion on KCC should be continued | 5 | - | - | - | - |

Ratings: Excellent -5, Good -4, Satisfactory -3, Somewhat Poor -2 and Very Poor -1.
Source: Primary Survey.

## Summing-up

The Kisan Call Centre, Guwahati, Assam covers entire North-Eastern region. There are thirty (30) numbers of agricultural graduates and post graduates employed at the Call Centre to give suitable answers to the queries of the farmers. The Farm Tele Advisors (FTAs) are convergent with the local languages like Assamese, Bengali, Garo, Khasi, Nagamis, Manipuri, Adi, Mizo *etc.*

As per records available, it was found that the efficiency of the KCC unit has increased manifold over time since its inception in 2004. Ability to respond to the farmers' questions together with the equipments in place (both hardware and software) had undergone marked changes during the period. With enhanced knowledge and better equipments, the FTAs were found to handle the farmers' calls 16 hours a day with rapt attention and dedication. They used to procure study materials like extension booklet, books and papers on their own to address the issues raised by the farmers, besides using the web-based information available with them. However, they were not comfortable enough to answer certain questions relating to technicalities, Government schemes and price and market related issues.

Except for occasional disturbance in internet connectivity and space problem in the office premises, the FTAs were satisfied with the discharge of their duties.

The functionaries at KCC usually visit the websites like KKMS, Agricultural University Portal and Accuweather for most of the issues. Other websites used by the Centre included Farmer's Portal and AgMarket.

There was no report of call escalation either to the Level–II or Level–III expertsin KCC, Guwahati. All the queries were answered from the available data base, by the FTAs, or in consultation with their colleagues as reported by the Supervisor.

The usefulness of the scheme, KCC can be perceived well, considering the fact that no other Departments can instantly offer solution or near solution to the farmers at the time of need. Without losing much time and energy, the Centre is serving the farming community in right perspective and as such, the Government should come forward to invigorate KCC with adequate policy support and generous funding.

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# CHAPTER - IV

## Results: Farmer Tele Advisers (FTAs) Survey

As per guidelines of the Coordinating Centre, all the FTAs (30 in number) of the KCC were interviewed personally and all relevant data were collected particularly, on facilities available and activities undertaken by the KCC, Guwahati centre. This chapter deals with the opinion data of the FTAs relating to hardware and software profiles, internet connectivity, assessment about information and knowledge, websites use for information sources, assessment of call efficiency, infrastructure availabilities and training provisions. Besides, some comments on existing system of functioning of the KCC were also recorded and incorporated in this chapter.

The study shows that half of the FTAs *i.e.* 50.00 per cent strongly reported that the available hardware was working well and up-to-date, 40.00 per cent of the FTAs strongly reported that the hardware was reliable, 70.00 per cent of the FTAs agreed that hardware was convenient enough to use for responding to farmer calls, 70.00 per cent strongly agreed that hardware can handle the call load and 50.00 per cent of the FTAs informed that the hardware did not breakdown frequently. By and large, the majority of the FTAs observed that the hardware was good enough for the job requirements. The ratings of the hardware in terms of percentage and score are indicated in Table 4.1.

The average ratings were calculated by adding all the percentages in each column multiplying with different scores and the total was divided by hundred. The average ratings indicated in Table 4.1 show that there was no problem in hardware operations as the highest rating of 4.67 was assigned against the statement ‘hardware can handle the call load’ and the lowest rating was recorded against ‘hardware does not breakdown frequently’ (3.73). At the overall level, the hardware was good enough for the work requirements (4.20).

Software is an important tool for the FTAs to perform day-to-day regular works. Details of software used in the KCC are presented in Table 4.2. The table shows that 60.00 per cent of the FTAs agreed that the software was up-to-date and 56.67 per cent strongly agreed that it was user friendly. However, another 60.00 per cent of FTAs partially agreed that some calls get dropped or mishandled by the software and as high as 73.33 per cent of the FTAs strongly disagreed that repeated or irrelevant calls can be blocked by the software. At overall level, 70.00 per cent of FTAs opined that the software used in the KCC, by and large, met with all requirements of the system.

**Table 4.1**
**Rating of hardware – per cent**

| | Strongly Agree | Agree | Partially Agree | Disagree | Strongly Disagree | Average Rating |
|---|---|---|---|---|---|---|
| The hardware is latest/up-to-date | 50.00 | 30.00 | 20.00 | 0.00 | 0.00 | 4.30 |
| It is reliable | 40.00 | 53.33 | 6.67 | 0.00 | 0.00 | 4.33 |
| It is convenient to use for responding to farmer calls | 10.00 | 70.00 | 20.00 | 0.00 | 0.00 | 3.90 |
| It can handle the call load | 70.00 | 26.67 | 3.33 | 0.00 | 0.00 | 4.67 |
| It does not breakdown frequently | 20.00 | 50.00 | 13.33 | 16.67 | 0.00 | 3.73 |
| The computer display is good | 50.00 | 30.00 | 20.00 | 0.00 | 0.00 | 4.30 |
| The interface of keyboard & mouse is good | 43.33 | 40.00 | 13.33 | 3.33 | 0.00 | 4.23 |
| Headsets are comfortable and work well | 30.00 | 36.67 | 23.33 | 6.67 | 3.33 | 3.83 |
| The hardware is good for the work requirements | 36.67 | 46.67 | 16.67 | 0.00 | 0.00 | 4.20 |

Ratings: Strongly Agree-5, Agree-4, Partially Agree-3, Disagree-2 and Strongly Disagree-1.
Source: Primary Survey.

**Table 4.2**
**Rating of software – per cent**

| | Strongly Agree | Agree | Partially Agree | Disagree | Strongly Disagree | Average Rating |
|---|---|---|---|---|---|---|
| The software is up-to-date | 0.00 | 60.00 | 40.00 | 0.00 | 0.00 | 3.60 |
| It is user friendly | 56.67 | 23.33 | 20.00 | 0.00 | 0.00 | 4.37 |
| The screen interface shows it is good & useful | 33.33 | 43.33 | 23.33 | 0.00 | 0.00 | 4.10 |
| Calls can be handled easily | 23.33 | 43.33 | 33.33 | 0.00 | 0.00 | 3.90 |
| The voice quality is good and clear | 0.00 | 13.33 | 53.33 | 33.33 | 0.00 | 2.80 |
| Calls do not get dropped, lost or mishandled by the software | 10.00 | 3.33 | 60.00 | 26.67 | 0.00 | 2.97 |
| The software can handle heavy call traffic | 13.33 | 53.33 | 33.33 | 0.00 | 0.00 | 3.80 |
| Software does not frequently crash | 10.00 | 0.00 | 30.00 | 53.33 | 6.67 | 2.53 |
| Caller details can be easily recorded and registered | 83.33 | 13.33 | 3.33 | 0.00 | 0.00 | 4.80 |
| Question details can be easily & quickly recorded | 53.33 | 46.67 | 0.00 | 0.00 | 0.00 | 4.53 |
| Repeated irrelevant calls can be blocked by the software | 0.00 | 0.00 | 0.00 | 26.67 | 73.33 | 1.27 |
| The software meets the requirements | 0.00 | 70.00 | 30.00 | 0.00 | 0.00 | 3.70 |

Ratings: Strongly Agree-5, Agree-4, Partially Agree-3, Disagree-2 and Strongly Disagree-1.
Source: Primary Survey.

As reflected in Table 4.2, the highest rating of 4.80 out of 5.00 was recorded against the observation, ‘caller details can be easily recorded’ and registered and the lowest rating

was noted against the statement, 'repeated irrelevant calls can be blocked by the software' (1.27). At overall level, the software used by the KCC met with all the requirements (3.70).

Internet connectivity is the most essential requirement to perform the regular work by the FTAs. Detailed observations made by the FTAs on internet connectivity are presented in Table 4.3. The table shows that 83.33 per cent of the FTAs readily agreed to the fact that slow internet speed hinders the performance of call handling process. At the same time, 56.67 per cent of FTAs opined that the connectivity was fast enough for responding to farmers' calls in view of the fact that it does not frequently breakdown, as reported by 70.00 per cent of the FTAs. Majority of the respondents (56.67 per cent) reported that internet connectivity at the KCC was adequate enough to discharge their duties.

**Table 4.3**
**Internet connectivity – per cent**

| | Strongly Agree | Agree | Partially Agree | Disagree | Strongly Disagree | Average Rating |
|---|---|---|---|---|---|---|
| Internet connectivity is very important for call handling process | 43.33 | 40.00 | 16.67 | 0.00 | 0.00 | 4.27 |
| A slow internet speed hinders the performance of call handling | 13.33 | 83.33 | 3.33 | 0.00 | 0.00 | 4.10 |
| Internet connectivity is fast enough for responding to calls | 6.67 | 33.33 | 56.67 | 3.33 | 0.00 | 3.43 |
| Internet connectivity is fast enough for retrieving & recording information | 36.67 | 33.33 | 30.00 | 0.00 | 0.00 | 4.07 |
| Internet connectivity does not frequently breakdown | 10.00 | 70.00 | 20.00 | 0.00 | 0.00 | 3.90 |
| Internet connectivity is adequate for the work | 10.00 | 56.67 | 30.00 | 3.33 | 0.00 | 3.73 |

Ratings: Strongly Agree-5, Agree-4, Partially Agree-3, Disagree-2 and Strongly Disagree-1.
Source: Primary Survey.

Importance of internet connectivity for call handling can be understood from the highest rating assigned (4.27) to it. The lowest was assigned (3.43) to the fastness of the net connectivity in responding to farmers' calls.

Various knowledge sources used by the FTAs for answering the farmers' queries are presented in Table 4.4. The table indicates that majority of the FTAs (76.67 per cent) answered the questions on their own and occasionally take help from the colleagues and Supervisor. Nearly, 60.00 per cent of FTAs were partially agreed to the fact that they used to take help from internet search and another 46.67 per cent took the help of extension booklets, books, papers, *etc*.

It is observed from the average rating that majority of FTAs answered the farmers' questions from their self-knowledge as it was found at highest rating (4.77) followed by colleagues and supervisor (3.83). On the other hand, an insignificant rating was assigned to University experts/Nodal officer knowledge (1.17) and information from other farmers (1.17). The lowest average rating was recorded (1.13) against the field enquiry. During the data collection, majority of the FTAs reported that did not ask for any help from the University experts/Nodal officer in answering the farmer's questions. Also, no field inquiry on its own was conducted by the KCC.

**Table 4.4**
**Frequency of knowledge sources used for answering – per cent**

| | Strongly Agree | Agree | Partially Agree | Disagree | Strongly Disagree | Average Rating |
|---|---|---|---|---|---|---|
| Self-Knowledge | 76.67 | 23.33 | 0.00 | 0.00 | 0.00 | 4.77 |
| Colleagues & Supervisor | 30.00 | 30.00 | 33.33 | 6.67 | 0.00 | 3.83 |
| Prepared Excel sheets & material | 13.33 | 13.33 | 46.67 | 16.67 | 10.00 | 3.03 |
| Internet search | 16.67 | 23.33 | 60.00 | 0.00 | 0.00 | 3.57 |
| Extension Booklets, books, papers | 10.00 | 46.67 | 33.33 | 10.00 | 0.00 | 3.57 |
| Government department sources/material | 6.67 | 6.67 | 56.67 | 23.33 | 6.67 | 2.83 |
| Knowledge acquired in Training | 16.67 | 36.67 | 16.67 | 6.67 | 23.33 | 3.17 |
| University experts/Nodal officer knowledge | 0.00 | 0.00 | 0.00 | 16.67 | 83.33 | 1.17 |
| Information from other farmers | 0.00 | 0.00 | 0.00 | 16.67 | 83.33 | 1.17 |
| Field Inquiry | 0.00 | 0.00 | 0.00 | 13.33 | 86.67 | 1.13 |

Ratings: Very Frequently-5, Frequently-4, Occasionally-3, Rarely-2 and Never-1.
Source: Primary Survey.

Rating of information and knowledge sources used by the FTAs are presented in Table 4.5. The table reflects that 76.67 per cent of FTAs answered the questions raised by the farmers from their self-knowledge and 33.33 per cent of FTAs occasionally/partially took the help from their colleagues and Supervisor. Another 56.67 per cent of FTAs occasionally took help of prepared excel sheets and materials and 60.00 per cent used internet search for the answers. Moreover, 50.00 per cent of FTAs occasionally used Government Department sources/material for answering the farmer's questions. It was observed from the analysis that majority of the FTAs answered the questions based on their self-knowledge and sometimes they took help from other information sources.

It is evident from the Table 4.5 that majority of FTAs were capable of answering the questions based on their self-knowledge as reflected by the highest average rating (4.77) followed by colleagues and supervisor (3.70). No significant rating was noted against University experts/Nodal officer knowledge (1.23) and information from other farmers (1.13). The lowest average rating was recorded at 1.10 against the field enquiry.

**Table 4.5**
**Rating of information and knowledge sources used – per cent**

| | Very Freque-ntly | Freque-ntly | Occasio-nally | Rarely | Never | Average Rating |
|---|---|---|---|---|---|---|
| Self-Knowledge | 76.67 | 23.33 | 0.00 | 0.00 | 0.00 | 4.77 |
| Colleagues & Supervisor | 30.00 | 23.33 | 33.33 | 13.33 | 0.00 | 3.70 |
| Prepared Excel sheets & material | 6.67 | 13.33 | 56.67 | 10.00 | 13.33 | 2.90 |
| Internet search | 6.67 | 26.67 | 60.00 | 6.67 | 0.00 | 3.33 |
| Extension Booklets, books, papers | 3.33 | 50.00 | 33.33 | 13.33 | 0.00 | 3.43 |
| Government department sources/Materials | 10.00 | 16.67 | 50.00 | 13.33 | 10.00 | 3.03 |
| Knowledge acquired in Training | 16.67 | 30.00 | 13.33 | 13.33 | 26.67 | 2.97 |
| University experts/Nodal officer knowledge | 0.00 | 0.00 | 0.00 | 23.33 | 76.67 | 1.23 |
| Information from other farmers | 0.00 | 0.00 | 0.00 | 13.33 | 86.67 | 1.13 |
| Field Inquiry | 0.00 | 0.00 | 0.00 | 10.00 | 90.00 | 1.10 |

Ratings: Very Frequently-5, Frequently-4, Occasionally-3, Rarely-2 and Never-1.
Source: Primary Survey.

Frequency of updating the information in the original sources is presented in Table 4.6. The table shows that 80.00 per cent of the FTAs updated their knowledge by themselves (very frequently). Further, majority of the FTAs used to take help occasionally from their colleagues and Supervisor (40.00 per cent). Updating of the database was done occasionally for the prepared excel sheet, internet search and other Government Department, as reported by 50.00 per cent of the FTAs. Updating of knowledge level against the Nodal officer/University experts had never or rarely been reported.

It is observed from the average rating that the majority of the FTAs used to update their knowledge base on their own with the highest rating of 4.80 and was followed by colleagues and Supervisor (3.80). On the other hand, insignificant average ratings were observed against University experts/Nodal officer knowledge (1.17) and information from

other farmers (1.13). The lowest average rating was found at 1.13 in respect of field enquiry so far as updating was concerned.

**Table 4.6**
**Frequency of updating the information in the sources – per cent**

| | Very Frequently | Frequently | Occasionally | Rarely | Never | Average Rating |
|---|---|---|---|---|---|---|
| Self-Knowledge | 80.00 | 20.00 | 0.00 | 0.00 | 0.00 | 4.80 |
| Colleagues & Supervisor | 33.33 | 20.00 | 40.00 | 6.67 | 0.00 | 3.80 |
| Prepared Excel sheets & material | 16.67 | 13.33 | 50.00 | 10.00 | 10.00 | 3.17 |
| Internet search | 23.33 | 23.33 | 50.00 | 3.33 | 0.00 | 3.67 |
| Extension Booklets, books, papers | 6.67 | 46.67 | 30.00 | 16.67 | 0.00 | 3.43 |
| Government department sources/material | 6.67 | 16.67 | 50.00 | 16.67 | 10.00 | 2.93 |
| Knowledge acquired in Training | 13.33 | 43.33 | 10.00 | 6.67 | 26.67 | 3.10 |
| University experts/Nodal officer knowledge | 0.00 | 0.00 | 0.00 | 16.67 | 83.33 | 1.17 |
| Information from other farmers | 0.00 | 0.00 | 0.00 | 13.33 | 86.67 | 1.13 |
| Field Inquiry | 0.00 | 0.00 | 0.00 | 13.33 | 86.67 | 1.13 |

Ratings: Very Frequently-5, Frequently-4, Occasionally-3, Rarely-2 and Never-1.
Source: Primary Survey.

Overall assessment of the information sources used for providing technical information is presented in Table 4.7. The table indicates that 63.33 per cent of FTAs agreed that the general information was easily available but some critical information was partially available in KCC databases. Majority of FTAs (90.00 per cent) agreed that the information provided to the farmers were reliable and 53.33 per cent of the FTAs agreed that the farmers seemed to be satisfied with it. At overall level, 50.00 per cent of the FTAs opined that sufficient and quality information were available in the KCC database to answer the farmer's questions.

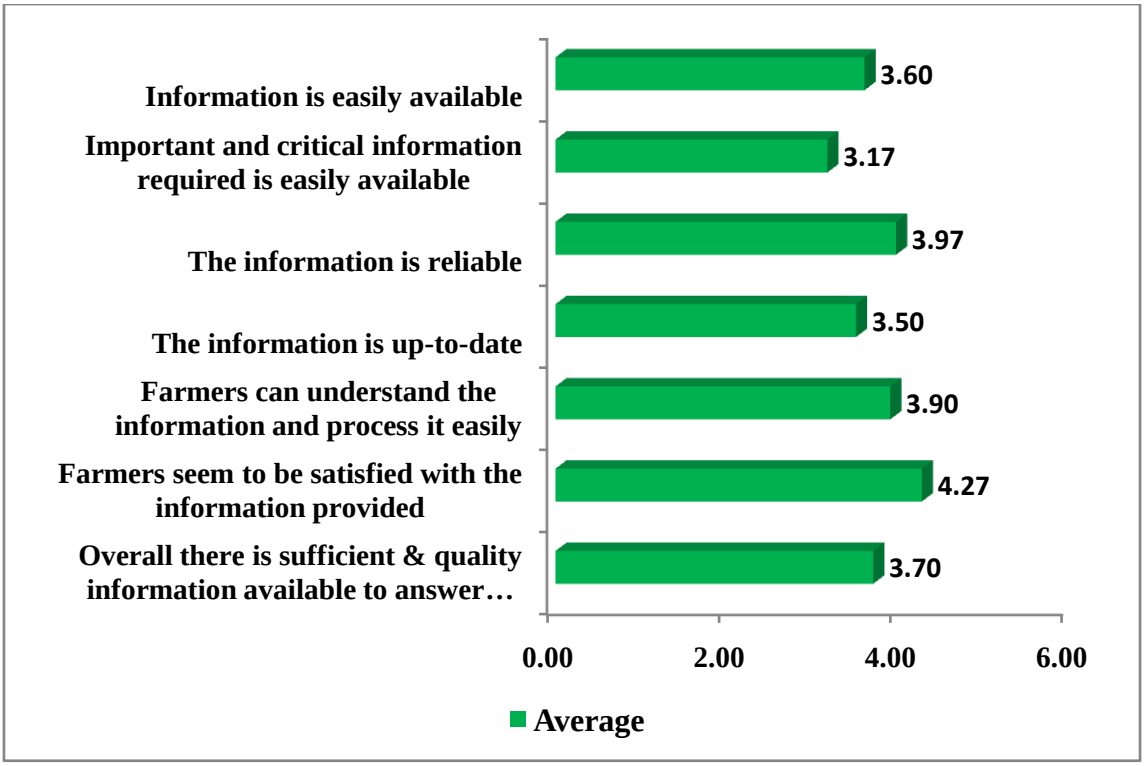
The average ratings as indicated in Table 4.7 show that there were enough information sources to provide technical backstopping at the Kisan Call Centre. The farmers seemed to be satisfied with the information provided with the highest rating of 4.27 and the lowest rating was found with the observation of 'important and critical information required is easily available (3.17)'. At overall level, there were sufficient and quality information available in the KCC to answer the farmer's questions (3.70). The Figure-4.1 clearly shows the details average ratings of the technical information**.**

**Table 4.7**
**Overall assessment of the information sources used for providing technical information – per cent**

| | Strongly Agree | Agree | Partially Agree | Disagree | Strongly Disagree | Average Rating |
|---|---|---|---|---|---|---|
| Information is easily available | 0.00 | 63.33 | 33.33 | 3.33 | 0.00 | 3.60 |
| Important and critical information required is easily available | 0.00 | 26.67 | 63.33 | 10.00 | 0.00 | 3.17 |
| The information is reliable | 3.33 | 90.00 | 6.67 | 0.00 | 0.00 | 3.97 |
| The information is up-to-date | 16.67 | 16.67 | 66.67 | 0.00 | 0.00 | 3.50 |
| Farmers can understand the information and process it easily | 16.67 | 56.67 | 26.67 | 0.00 | 0.00 | 3.90 |
| Farmers seem to be satisfied with the information provided | 36.67 | 53.33 | 10.00 | 0.00 | 0.00 | 4.27 |
| Overall there is sufficient & quality information available to answer farmer's questions | 10.00 | 50.00 | 40.00 | 0.00 | 0.00 | 3.70 |

Ratings: Strongly Agree-5, Agree-4, Partially Agree-3, Disagree-2 and Strongly Disagree-1.
Source: Primary Survey.

**Figure-4.1: Overall assessment of technical information**



Overall assessment of the information sources used for providing Government scheme related information is presented in Table 4.8. The table clearly shows that 53.33 to 66.67 per cent of the FTAs partially agreed that all information general and critical were easily available in KCC. A major section of the FTAs (66.67 per cent) were of the view that all the information provided to the farmers was reliable. Similarly, 50.00 per cent of the FTAs found the farmers to be satisfied with the information provided to them. At overall level, 63.33 per cent of the FTAs partially agreed that there were sufficient and quality information available in the KCC database to answer the farmer's questions.

The Table 4.8 further shows that the highest rating was assigned against the statement 'farmers seem to be satisfied with the information provided (4.37)' and the lowest rating on 'important and critical information required is easily available (3.37)'. The Figure-4.2 clearly indicates the average ratings on the Government scheme related information**.** It was observed during the data collection that Government scheme related information was not regularly updated.

Overall assessment of the information sources used for providing price and market related information is presented in Table 4.9. The table reflects that majority of the FTAs observed that all the information were easily available in the Centre and were reliable as well. Of the total, 40.00 per cent of the FTAs partially agreed that the farmers were satisfied with the information provided to them. At overall level, 20.00 per cent of FTAs strongly agreed, 26.67 per cent agreed and 53.33 per cent of FTAs partially agreed to the fact that sufficient and quality information were available in the KCC to answer the farmer's questions.

The Table 4.9 shows that the highest average rating was found against the statement that the farmers seemed to be satisfied with the information provided (3.97) and the lowest rating was recorded with easy availability of important and critical information (3.40). The Figure-4.3 clearly shows the detailed average ratings of the price and market related information**.** It was noticed at the time of the data collection that price and market related information were not regularly updated by the concerned Departments of the State.

Overall assessment of information sources used for other purpose is presented in Table 4.10. Other information include weather report, KCC loan, crop insurance, *etc.* These information were collected by the FTAs from different Government reports and different websites like accuweather.com, Assam Agricultural University website, ICAR website, Bank report *etc.* The table shows that at overall level, 26.67 per cent of FTAs strongly agreed and 36.67 per cent each agreed and partially agreed to the fact that sufficient and quality information were available in the KCC itself to answer the farmer's questions.

**Table 4.8**
**Overall assessment of the information sources used for providing government schemes related information – per cent**

| | Strongly Agree | Agree | Partially Agree | Disagree | Strongly Disagree | Average Rating |
|---|---|---|---|---|---|---|
| Information is easily available | 6.67 | 40.00 | 53.33 | 0.00 | 0.00 | 3.53 |
| Important and critical information required is easily available | 3.33 | 30.00 | 66.67 | 0.00 | 0.00 | 3.37 |
| The information is reliable | 23.33 | 66.67 | 10.00 | 0.00 | 0.00 | 4.13 |
| The information is up-to-date | 6.67 | 20.00 | 73.33 | 0.00 | 0.00 | 3.33 |
| Farmers can understand the information and process it easily | 36.67 | 56.67 | 6.67 | 0.00 | 0.00 | 4.30 |
| Farmers seem to be satisfied with the information provided | 43.33 | 50.00 | 6.67 | 0.00 | 0.00 | 4.37 |
| Overall there is sufficient & quality information available to answer farmer's questions | 10.00 | 26.67 | 63.33 | 0.00 | 0.00 | 3.47 |

Ratings: Strongly Agree-5, Agree-4, Partially Agree-3, Disagree-2 and Strongly Disagree-1.
Source: Primary Survey.

**Figure-4.2 : Overall rating on Government schemes related information**

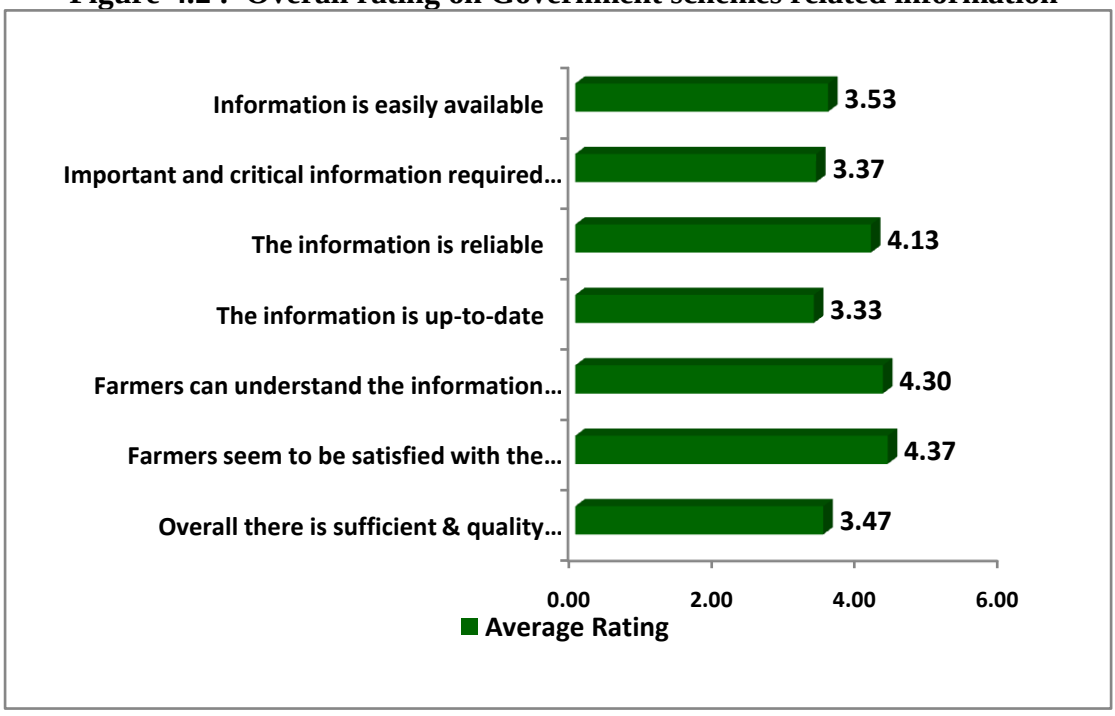


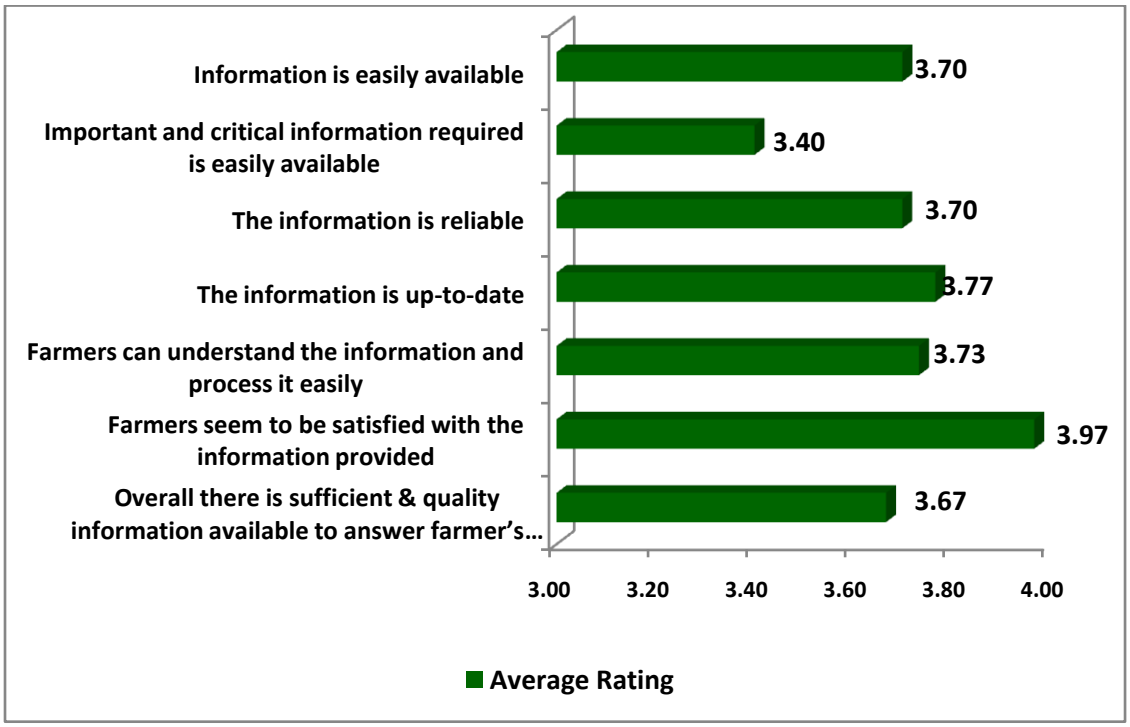
**Table 4.9**
**Overall assessment of the information sources used for providing price and market related information – per cent**

| | Strongly Agree | Agree | Partially Agree | Disagree | Strongly Disagree | Average Rating |
|---|---|---|---|---|---|---|
| Information is easily available | 20.00 | 30.00 | 50.00 | 0.00 | 0.00 | 3.70 |
| Important and critical information required is easily available | 6.67 | 36.67 | 46.67 | 10.00 | 0.00 | 3.40 |
| The information is reliable | 13.33 | 43.33 | 43.33 | 0.00 | 0.00 | 3.70 |
| The information is up-to-date | 26.67 | 23.33 | 50.00 | 0.00 | 0.00 | 3.77 |
| Farmers can understand the information and process it easily | 20.00 | 33.33 | 46.67 | 0.00 | 0.00 | 3.73 |
| Farmers seem to be satisfied with the information provided | 36.67 | 23.33 | 40.00 | 0.00 | 0.00 | 3.97 |
| Overall there is sufficient & quality information available to answer farmer's questions | 20.00 | 26.67 | 53.33 | 0.00 | 0.00 | 3.67 |

Ratings: Strongly Agree-5, Agree-4, Partially Agree-3, Disagree-2 and Strongly Disagree-1.

Source: Primary Survey.

**Figure-4.3: Overall rating on price and market related information**




Further, maximum rating of 4.03 was found against the reliability of information, while lowest rating was assigned to easy availability of important and critical information

(340). The Figure-4.4 clearly shows the detailed average ratings of other information sources**.** It was observed that enough and quality information were readily available in the KCC to answer the farmer's questions.

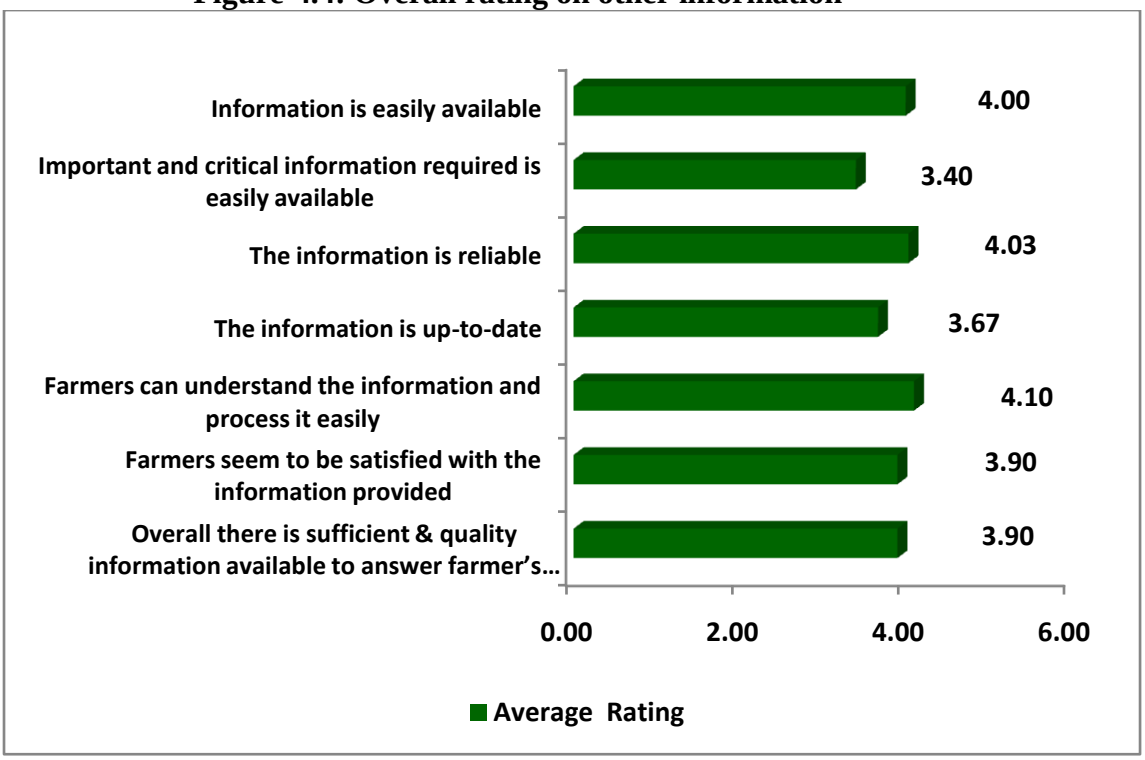
**Table 4.10**

**Overall assessment of the information sources used for other information – per cent**

| | Strongly Agree | Agree | Partially Agree | Disagree | Strongly Disagree | Average Rating |
|---|---|---|---|---|---|---|
| Information is easily available | 30.00 | 40.00 | 30.00 | 0.00 | 0.00 | 4.00 |
| Important and critical information required is easily available | 3.33 | 36.67 | 56.67 | 3.33 | 0.00 | 3.40 |
| The information is reliable | 26.67 | 50.00 | 23.33 | 0.00 | 0.00 | 4.03 |
| The information is up-to-date | 26.67 | 23.33 | 40.00 | 10.00 | 0.00 | 3.67 |
| Farmers can understand the information and process it easily | 26.67 | 56.67 | 16.67 | 0.00 | 0.00 | 4.10 |
| Farmers seem to be satisfied with the information provided | 26.67 | 36.67 | 36.67 | 0.00 | 0.00 | 3.90 |
| Overall there is sufficient & quality information available to answer farmer's questions | 26.67 | 36.67 | 36.67 | 0.00 | 0.00 | 3.90 |

Ratings: Strongly Agree-5, Agree-4, Partially Agree-3, Disagree-2 and Strongly Disagree-1.
Source: Primary Survey.

**Figure-4.4: Overall rating on other information**



Websites are the most important components for smooth functioning of the KCC. Assessment of KKMS website is shown in Table 4.11. The table shows that 83.33 per cent of the FTAs strongly agreed that KKMS website was easy to use. Another, 76.67 per cent strongly agreed that the organization of information on the system screens was clear. They further reported that the website response was fast enough (36.67 per cent), updating was regular (16.67 per cent) and retrieving of information from the KKMS was easy (30.00 per cent). At overall level, more than 40.00 per cent FTAs opined that the KKMS website really worked well.

The table further indicates that the highest average rating was assigned to easy use of KKMS website (4.80) followed by clarity of organization of information on the system screens (4.77). The lowest average rating was found against making changes in the information even after being recorded (3.13). At the overall level, it was observed that the KKMS website worked well with an average rating of 4.23.

Assessment of Farmer's Portal Website is shown in Table 4.12. The website was occasionally used by the FTAs. Majority of the FTAs reported that the website was easy to use and the organization of information on the system screens was clear. The website was found to be very useful and response was also fast enough. At overall level, the FTAs agreed (43.33 per cent) and partially agreed (56.67 per cent) to the statement that 'the Farmer's Portal really works well'.

The table also shows that the highest average rating was assigned against the easiness of the use of farmer's portal website (4.17) and the lowest average rating was recorded with the score of 2.83 against regular updating of website information. At the overall level, the Farmer's Portal was found to work well with an average rating of 3.43.

M-Kisan website was not used in the KCC, Guwahati for which no responses could be recorded in Table 4.13.

Details of call efficiency are presented in Table 4.14. It was observed from the table that majority of the FTAs were of the strong opinion that the voice reception over the phone was clear; call drops were very less and the farmers did not face difficulty in understanding the dialect of FTAs. But, a significant section of FTAs (56.67 per cent) partially agreed that some of the farmers while interacting with the FTAs, faced difficulty in understanding the scientific/technical terminologies. But the overall call efficiency was good in KCC, Guwahati, as reported by more than 70.00 per cent of the FTAs.

**Table 4.11**

**Assessment of Kisan Knowledge Management System (KKMS) website – per cent**

| | Strongly Agree | Agree | Partially Agree | Disagree | Strongly Disagree | Average Rating |
|---|---|---|---|---|---|---|
| KKMS website is easy to use | 83.33 | 13.33 | 3.33 | 0.00 | 0.00 | 4.80 |
| The organization of information on the system screens is clear | 76.67 | 23.33 | 0.00 | 0.00 | 0.00 | 4.77 |
| KKMS website response is fast enough | 36.67 | 36.67 | 23.33 | 3.33 | 0.00 | 4.07 |
| Information on the website is regularly updated | 16.67 | 26.67 | 43.33 | 13.33 | 0.00 | 3.47 |
| KKMS website does not fail to respond or crash during use | 0.00 | 46.67 | 46.67 | 6.67 | 0.00 | 3.40 |
| You can make changes in the information after the information is recorded | 13.33 | 33.33 | 23.33 | 13.33 | 16.67 | 3.13 |
| Retrieving information from KKMS is easy | 30.00 | 33.33 | 30.00 | 3.33 | 3.33 | 3.83 |
| Overall the KKMS website works well | 40.00 | 43.33 | 16.67 | 0.00 | 0.00 | 4.23 |

Ratings: Strongly Agree-5, Agree-4, Partially Agree-3, Disagree-2 and Strongly Disagree-1.
Source: Primary Survey.

**Table 4.12**

**Assessment of Farmers Portal Website – per cent**

| | Strongly Agree | Agree | Partially Agree | Disagree | Strongly Disagree | Average Rating |
|---|---|---|---|---|---|---|
| The website is frequently used | 0.00 | 33.33 | 66.67 | 0.00 | 0.00 | 3.33 |
| The website is easy to use | 33.33 | 50.00 | 16.67 | 0.00 | 0.00 | 4.17 |
| The organization of information on the system screens is clear | 10.00 | 66.67 | 23.33 | 0.00 | 0.00 | 3.87 |
| The website response is fast enough | 13.33 | 36.67 | 50.00 | 0.00 | 0.00 | 3.63 |
| The website is very useful | 10.00 | 36.67 | 23.33 | 30.00 | 0.00 | 3.27 |
| Information on the website is regularly updated | 6.67 | 3.33 | 56.67 | 33.33 | 0.00 | 2.83 |
| The website does not fail to respond or crash during use | 0.00 | 20.00 | 46.67 | 33.33 | 0.00 | 2.87 |
| Overall the website works well | 0.00 | 43.33 | 56.67 | 0.00 | 0.00 | 3.43 |

Ratings: Strongly Agree-5, Agree-4, Partially Agree-3, Disagree-2 and Strongly Disagree-1.
Source: Primary Survey.

**Table 4.13**

**Assessment of m-Kisan Website – per cent**

| | Strongly Agree | Agree | Partially Agree | Disagree | Strongly Disagree | Average Rating |
|---|---|---|---|---|---|---|
| The website is frequently used | 0.00 | 0.00 | 0.00 | 0.00 | 100.00 | 1.00 |
| The website is easy to use | 0.00 | 0.00 | 0.00 | 0.00 | 100.00 | 1.00 |
| The organization of information on the system screens is clear | 0.00 | 0.00 | 0.00 | 0.00 | 100.00 | 1.00 |
| Registration of SMS is easy | 0.00 | 0.00 | 0.00 | 0.00 | 100.00 | 1.00 |
| List of services available are useful | 0.00 | 0.00 | 0.00 | 0.00 | 100.00 | 1.00 |
| The website response is fast enough | 0.00 | 0.00 | 0.00 | 0.00 | 100.00 | 1.00 |
| Information on the website is regularly updated | 0.00 | 0.00 | 0.00 | 0.00 | 100.00 | 1.00 |
| The website does not fail to respond or crash during use | 0.00 | 0.00 | 0.00 | 0.00 | 100.00 | 1.00 |
| Overall the website works well | 0.00 | 0.00 | 0.00 | 0.00 | 100.00 | 1.00 |

Ratings: Strongly Agree-5, Agree-4, Partially Agree-3, Disagree-2 and Strongly Disagree-1.
Source: Primary Survey.

The Table 4.14 also shows the average rating on call efficiency in KCC, Guwahati. It is observed from the table that the highest average rating was found against clarity of voice

**Table 4.14**

**Assessing call efficiency – per cent**

| | Strongly Agree | Agree | Partially Agree | Disagree | Strongly Disagree | Average Rating |
|---|---|---|---|---|---|---|
| Voice reception over the phone is clear | 43.33 | 50.00 | 6.67 | 0.00 | 0.00 | 4.37 |
| Call drops are very less | 30.00 | 43.33 | 26.67 | 0.00 | 0.00 | 4.03 |
| It is easy to understand the queries from farmers | 36.67 | 13.33 | 50.00 | 0.00 | 0.00 | 3.87 |
| Farmers does not face difficulty in understanding your dialect | 36.67 | 56.67 | 6.67 | 0.00 | 0.00 | 4.30 |
| Farmers does not face difficulty in understanding scientific/technical words | 33.33 | 10.00 | 56.67 | 0.00 | 0.00 | 3.77 |
| You generally do not get irrelevant calls | 0.00 | 0.00 | 36.67 | 43.33 | 20.00 | 2.17 |
| You generally do not face abusive language | 0.00 | 0.00 | 20.00 | 30.00 | 50.00 | 1.70 |
| Overall, call efficiency is good | 3.33 | 70.00 | 26.67 | 0.00 | 0.00 | 3.77 |

Ratings: Strongly Agree-5, Agree-4, Partially Agree-3, Disagree-2 and Strongly Disagree-1.
Source: Primary Survey.

reception over the phone (4.37) and the lowest rating was recorded against the statement of facing abusive language by the FTAs (1.17). It was reported by almost all the FTAs that they did receive some irrelevant calls as well from the farmers.

Assessment of the call answering system efficiency and its effectiveness is presented in Table 4.15. The table shows that the majorities of the FTAs were capable of answering and handling the questions independently. But, due to some unexpected situation, if the FTAs failed to give an appropriate answer to the farmer's query then they used to ask for help either from the colleagues or from the Supervisor. By and large, more than 90.00 per cent of the FTAs reported that the call answering system was adequate enough to address the farmers' queries.

The table further indicates that the highest average rating was assigned against the capability of FTAs in answering and handling the questions (4.63), followed by the queries not solved by the colleagues, but well answered by the Supervisors (4.40) and the queries not solved by the FTAs, but well answered by colleagues (4.33). At overall level, the call answering system was found adequate (4.40). It was reported by the FTAs that all the queries of the farmers were solved by the FTAs or by the Supervisor and therefore, there were no records of call escalation either to the Level-II or to the Level-III experts.

The infrastructure ratings of KCC, Guwahati are shown in the Table 4.16. It was observed that the office infrastructures were quite well in the KCC and majority of FTAs considered the office space to be adequate enough along with adequate provision for lighting and ventilation as indicated in the table. Around 53.00 per cent of the FTAs partially agreed to the statement of availability of well-separated activity area. Also, inadequacy of supporting facilities and utilities was reported by more than half of the FTAs. Insufficiency of video surveillance was reported by all the FTAs on job. Other department's noise did not hinder the FTAs in answering the farmer's questions. At overall level, the working environment was reported to be good enough as indicated by more than 50.00 per cent of FTAs.

The average ratings on available infrastructures are also shown in Table 4.16. It is observed from the table that the highest average rating was assigned to sufficiency of lighting in the office premises (5.00), followed by adequate ventilation (4.70), adequacy of office space (4.37) and sufficiency of activity area for calling (4.30). The lowest average rating of 1.00 was observed against insufficiency of video surveillance monitoring of the activities. Frequency of power cuts was reported to be less with an average rating of 3.77.

**Table 4.15**
**Assessing the call answering efficiency and effectiveness – per cent**

| | Strongly Agree | Agree | Partially Agree | Disagree | Strongly Disagree | Average Rating |
|---|---|---|---|---|---|---|
| Generally, you are able to answer and handle the questions | 63.33 | 36.67 | 0.00 | 0.00 | 0.00 | 4.63 |
| Queries not solved by you are well answered by colleagues | 43.33 | 46.67 | 10.00 | 0.00 | 0.00 | 4.33 |
| Queries not solved by colleagues are well answered by Supervisors | 63.33 | 13.33 | 23.33 | 0.00 | 0.00 | 4.40 |
| Queries not solved by supervisors are easily escalated to level 2 | 0.00 | 0.00 | 0.00 | 0.00 | 100.00 | 1.00 |
| Queries escalated to level 2 are well attended by State Agriculture Experts | 0.00 | 0.00 | 0.00 | 0.00 | 100.00 | 1.00 |
| Level 2 experts speedily attend to the queries | 0.00 | 0.00 | 0.00 | 0.00 | 100.00 | 1.00 |
| Queries not solved in level 2 are escalated to level 3 | 0.00 | 0.00 | 0.00 | 0.00 | 100.00 | 1.00 |
| Queries escalated to level 3 are well attended by Nodal officer | 0.00 | 0.00 | 0.00 | 0.00 | 100.00 | 1.00 |
| Nodal officers respond to farmers by all/SMS/post/email | 0.00 | 0.00 | 0.00 | 0.00 | 100.00 | 1.00 |
| Overall the call answering system is adequate | 46.67 | 46.67 | 6.67 | 0.00 | 0.00 | 4.40 |

Ratings: Strongly Agree-5, Agree-4, Partially Agree-3, Disagree-2 and Strongly Disagree-1.
Source: Primary Survey.

Regular training to the FTAs is highly desirable for continuous updating of knowledge base. The Directorate of Extension Education, Assam Agricultural University, Jorhat is functioning as member of the Working Team of the KCC Nodal Cell for North-Eastern states. This Directorate is regularly providing technology backstopping to KCC level-I and level-II experts by imparting training during *rabi* and *kharif* season to enrich their knowledge. The level–II experts assist the KCC agents in answering the farmers' queries on request, in a call conferencing mode. Besides, IKSL was also providing training to the FTAs for updating their knowledge on hardware as well as software management.

**Table 4.16**
**Infrastructure rating – per cent**

| | Strongly Agree | Agree | Partially Agree | Disagree | Strongly Disagree | Average Rating |
|---|---|---|---|---|---|---|
| The office space is adequate | 36.67 | 63.33 | 0.00 | 0.00 | 0.00 | 4.37 |
| The activity area for calling is sufficient | 43.33 | 43.33 | 13.33 | 0.00 | 0.00 | 4.30 |
| The activity area is well separated | 20.00 | 26.67 | 53.33 | 0.00 | 0.00 | 3.67 |
| You do not get disturbed while answering of calls | 0.00 | 50.00 | 50.00 | 0.00 | 0.00 | 3.50 |
| Lighting is sufficient | 100.00 | 0.00 | 0.00 | 0.00 | 0.00 | 5.00 |
| There is adequate ventilation | 70.00 | 30.00 | 0.00 | 0.00 | 0.00 | 4.70 |
| Video surveillance is sufficient for monitoring | 0.00 | 00.00 | 00.00 | 00.00 | 100.00 | 1.00 |
| Power cuts are not frequent | 13.33 | 50.00 | 36.67 | 0.00 | 0.00 | 3.77 |
| Other departments noise does not hinder your answering efficiency | 30.00 | 40.00 | 10.00 | 20.00 | 0.00 | 3.80 |
| Supporting facilities & utilities are adequate | 10.00 | 30.00 | 20.00 | 40.00 | 0.00 | 3.10 |
| Overall there is good working environment | 26.67 | 26.67 | 46.67 | 0.00 | 0.00 | 3.80 |

Ratings: Strongly Agree-5, Agree-4, Partially Agree-3, Disagree-2 and Strongly Disagree-1.
Source: Primary Survey.

Overall assessment on usefulness of training programmes is shown in Table 4.17. The table shows that majority of FTAs strongly agreed that the training was more helpful in understanding the call handling procedure as well as for updating of knowledge on crop management during *rabi* and *kharif* season. However, no much knowledge was acquired on operation of hardware and software as reported by half of the FTAs. But, majority of the FTAs strongly agreed on importance of imparting more and better training of regular interval. Training at overall level, was reported to be useful and helpful as 20.00 per cent of the FTAs strongly agreed to it; another 43.33 per cent of the FTAs agreed and 36.67 per cent of the FTAs partially agreed.

The Table 4.17 also shows average ratings of overall assessment on usefulness of training programmes. The highest average rating was seen against demand for more and better training (4.47), followed by arranging the training at regular interval (4.40) and help and assistance gained from training to handle the questions of the farmers (4.20). At overall level, the training programmes were reported to be useful and sufficient (3.83). However, no much knowledge was acquired by the FTAs on operation of hardware and software as evident from the lowest rating assigned to this area.

Details of self-assessment of FTAs are placed in Table 4.18. The table indicates that majority of the FTAs were quick in responding to calls and were able to manage the calls efficiently. Further, most of the FTAs had sufficient knowledge and were capable of answering the farmer's questions by themselves. This is well reflected from the fact that there were no records of escalating the calls to higher levels to answer the farmer's questions. It was also observed from the table that majority of the FTAs were highly motivated, disciplined and punctual in attending to their duties and they used to take good initiative to improve, innovate and perform better in the KCC.

**Table 4.17**
**Overall assessment of usefulness of training programmes-per cent**

| | Strongly Agree | Agree | Partially Agree | Disagree | Strongly Disagree | Average Rating |
|---|---|---|---|---|---|---|
| It helps in understanding call handling procedure of the KCC | 16.67 | 46.67 | 36.67 | 0.00 | 0.00 | 3.80 |
| It helps in operating of the hardware | 0.00 | 23.33 | 40.00 | 20.00 | 16.67 | 2.70 |
| It helps in operating of the software | 0.00 | 20.00 | 60.00 | 3.33 | 16.67 | 2.83 |
| It helps in understanding questions of farmer | 16.67 | 50.00 | 33.33 | 0.00 | 0.00 | 3.83 |
| It helps in how to handle the questions of farmer | 46.67 | 26.67 | 26.67 | 0.00 | 0.00 | 4.20 |
| It helps in getting the necessary knowledge | 30.00 | 46.67 | 23.33 | 0.00 | 0.00 | 4.07 |
| It helps in updating knowledge | 16.67 | 50.00 | 33.33 | 0.00 | 0.00 | 3.83 |
| It helps in getting knowledge of Government schemes | 3.33 | 16.67 | 76.67 | 3.33 | 0.00 | 3.20 |
| More & better training is required | 56.67 | 33.33 | 10.00 | 0.00 | 0.00 | 4.47 |
| Training should be regularly given | 50.00 | 40.00 | 10.00 | 0.00 | 0.00 | 4.40 |
| Overall the available training is useful & sufficient | 20.00 | 43.33 | 36.67 | 0.00 | 0.00 | 3.83 |

Ratings: Strongly Agree-5, Agree-4, Partially Agree-3, Disagree-2 and Strongly Disagree-1.
Source: Primary Survey.

The highest average rating was accordingly found against showing good discipline, attendance and punctuality by the FTAs (4.53) and escalation of calls to higher levels bore the lowest rating (1.83) to answer the questions. At overall level, FTAs were satisfied with their performance (4.20).

Overall assessment of call handling by FTAs is presented in Table 4.19. The table shows that a significant number of calls were received daily by the FTAs and all calls were handled efficiently by them as reported by more than 70.00 per cent of FTAs. A robust call

handling system in place helped them a lot to support the farmers. Moreover, it is also observed from the table that there were good working relationships between the farmers and the FTAs to communicate with each other at ease. The farmers seemed to be satisfied with handling and speed of responses on their queries, as perceived by more than 83.00 per cent of the FTAs.

**Table 4.18**
**Self- assessment of the FTA-per cent**

| | Strongly Agree | Agree | Partially Agree | Disagree | Strongly Disagree | Average Rating |
|---|---|---|---|---|---|---|
| You are quick in responding to calls | 36.67 | 46.67 | 16.67 | 0.00 | 0.00 | 4.20 |
| You are able to manage the calls efficiently | 30.00 | 43.33 | 26.67 | 0.00 | 0.00 | 4.03 |
| You have sufficient knowledge & capability to answer questions | 43.33 | 36.67 | 20.00 | 0.00 | 0.00 | 4.23 |
| You are generally able to answer the questions by yourself | 43.33 | 46.67 | 10.00 | 0.00 | 0.00 | 4.33 |
| You are able to quickly access the database/information to answer questions | 26.67 | 40.00 | 33.33 | 0.00 | 0.00 | 3.93 |
| You can take the help of colleagues to answer questions | 30.00 | 20.00 | 50.00 | 0.00 | 0.00 | 3.80 |
| You can escalate calls to higher levels to answer questions | 0.00 | 0.00 | 0.00 | 83.33 | 16.67 | 1.83 |
| You are able to satisfactorily find answers for the farmer's questions | 50.00 | 36.67 | 13.33 | 0.00 | 0.00 | 4.37 |
| You show good discipline, attendance & punctuality | 56.67 | 40.00 | 3.33 | 0.00 | 0.00 | 4.53 |
| You are well motivated | 46.67 | 40.00 | 13.33 | 0.00 | 0.00 | 4.33 |
| You take good initiative to improve, innovate and perform better | 53.33 | 13.33 | 33.33 | 0.00 | 0.00 | 4.20 |
| You are well trained | 20.00 | 43.33 | 36.67 | 0.00 | 0.00 | 3.83 |
| Overall you are satisfied with your performance | 36.67 | 46.67 | 16.67 | 0.00 | 0.00 | 4.20 |

Ratings: Strongly Agree-5, Agree-4, Partially Agree-3, Disagree-2 and Strongly Disagree-1.
Source: Primary Survey.

Accordingly, the highest average rating was found against goodness of call handling systems/procedures (4.40), followed by mutual understanding of the farmer and FTAs for better communication (4.37). At overall level, the farmers seemed to be satisfied with the handling and speed of responses given by the FTAs (4.20).

**Table 4.19**
**Overall assessment of call handling –per cent**

| | Strongly Agree | Agree | Partially Agree | Disagree | Strongly Disagree | Average Rating |
|---|---|---|---|---|---|---|
| A large number of calls are received every day at the KCC | 3.33 | 70.00 | 26.67 | 0.00 | 0.00 | 3.77 |
| All calls can be handled efficiently at the KCC | 3.33 | 70.00 | 26.67 | 0.00 | 0.00 | 3.77 |
| Call handling systems/procedures are good | 46.67 | 46.67 | 6.67 | 0.00 | 0.00 | 4.40 |
| The farmer & FTA can understand each other & communicate easily | 50.00 | 36.67 | 13.33 | 0.00 | 0.00 | 4.37 |
| Overall the farmers seem satisfied with the handling & speed of response | 36.67 | 46.67 | 16.67 | 0.00 | 0.00 | 4.20 |

Ratings: Strongly Agree-5, Agree-4, Partially Agree-3, Disagree-2 and Strongly Disagree-1.
Source: Primary Survey.

Overall assessment of hardware, software and infrastructure by the FTAs is presented in Table 4.20. The table indicates that the performance of the hardware and software were good and helpful as reported by 83.34 per cent and 70.00 per cent of FTAs, respectively. However, the performance of the internet connectivity and the infrastructures and service supports were not that excellent even though the jobs were being undertaken smoothly under the KCC, Guwahati.

Accordingly the highest rating was recorded against the performance of the hardware (4.20) followed by the performance of the software (3.60) and good internet connectivity (3.60). At overall level, the infrastructure and service support was noted as good with an average rating of 3.80.

Overall assessment of information provided by FTAs is presented in Table 4.21. The table shows that majority of the FTAs (80.00 per cent) either strongly agreed or agreed to adequacy of knowledge, information and data-base available. Up-to-date answers were provided on technical questions as reported by 66.67 per cent of the FTAs. On the other hand, majority of FTAs partially agreed to adequacy of up-to-date answers provided on Government schemes related questions and price and market related questions. At overall level, most of the farmers seemed to be satisfied with the information provided by the FTAs, as reflected in the table.

**Table 4.20**
**Overall assessment of hardware, software and infrastructure-per cent**

| | Strongly Agree | Agree | Partially Agree | Disagree | Strongly Disagree | Average Rating |
|---|---|---|---|---|---|---|
| The performance of the hardware used is good & it is helpful | 36.67 | 46.67 | 16.67 | 0.00 | 0.00 | 4.20 |
| The performance of the software used is good & it is helpful | 0.00 | 70.00 | 30.00 | 0.00 | 0.00 | 3.70 |
| The performance of the internet connectivity is good | 16.67 | 26.67 | 56.67 | 0.00 | 0.00 | 3.60 |
| The infrastructure & service support is good | 26.67 | 26.67 | 46.67 | 0.00 | 0.00 | 3.80 |

Ratings: Strongly Agree-5, Agree-4, Partially Agree-3, Disagree-2 and Strongly Disagree-1.
Source: Primary Survey.

Table 4.21 also indicates the average ratings on overall assessment of information provided by the KCC. It is observed that the highest average rating was worked out against the adequacy of knowledge, information and data-base available with FTAs (4.23), followed by providing up-to-date answers on technical questions (3.93), weather and general questions (3.90), price and market related questions (3.67) and Government schemes related questions (3.47). As such, with an average rating of 3.90, the farmers were found satisfied with the working condition of the KCC.

Overall assessment of the KCC done by the FTAs is placed in Table 4.22. The table indicates that the performance of the KCC together with the contribution made by the FTAs was quite good. But the existing system and policies of KCC, as perceived by them were not of good taste. More than 85.00 per cent of the FTAs were dissatisfied with their contractual engagement and low salary. However, on the matter of usefulness and benefits of KCC towards farmers and State's agriculture, more than 96.00 per cent of the FTAs strongly opined to go for it with renewed vigour and more support from the Government.

It is further observed from the Table 4.22 that the highest average rating was seen against continuance of the KCC scheme (4.83), followed by usefulness of the KCC to the farmers and the state's agriculture (4.43) and overall performance/contribution of the FTAs at the KCC (4.10). The Figure-4.6 clearly indicates the detailed average ratings of the overall assessment of the KCC.

**Table 4.21**
**Overall assessment of information provided - per-cent**

| | Strongly Agree | Agree | Partially Agree | Dis-agree | Strongly Disagree | Average Rating |
|---|---|---|---|---|---|---|
| The knowledge, information and data-base available with you is adequate | 43.33 | 36.67 | 20.00 | 0.00 | 0.00 | 4.23 |
| Adequate & up-to-date answers are provided on technical questions | 26.67 | 40.00 | 33.33 | 0.00 | 0.00 | 3.93 |
| Adequate & up-to-date answers are provided on government schemes related questions | 10.00 | 26.67 | 63.33 | 0.00 | 0.00 | 3.47 |
| Adequate & up-to-date answers are provided on price & market related questions | 20.00 | 26.67 | 53.33 | 0.00 | 0.00 | 3.67 |
| Adequate & up-to-date answers are provided on weather & general questions | 26.67 | 36.67 | 36.67 | 0.00 | 0.00 | 3.90 |
| Overall the farmers seem satisfied with the information provided | 26.67 | 36.67 | 36.67 | 0.00 | 0.00 | 3.90 |

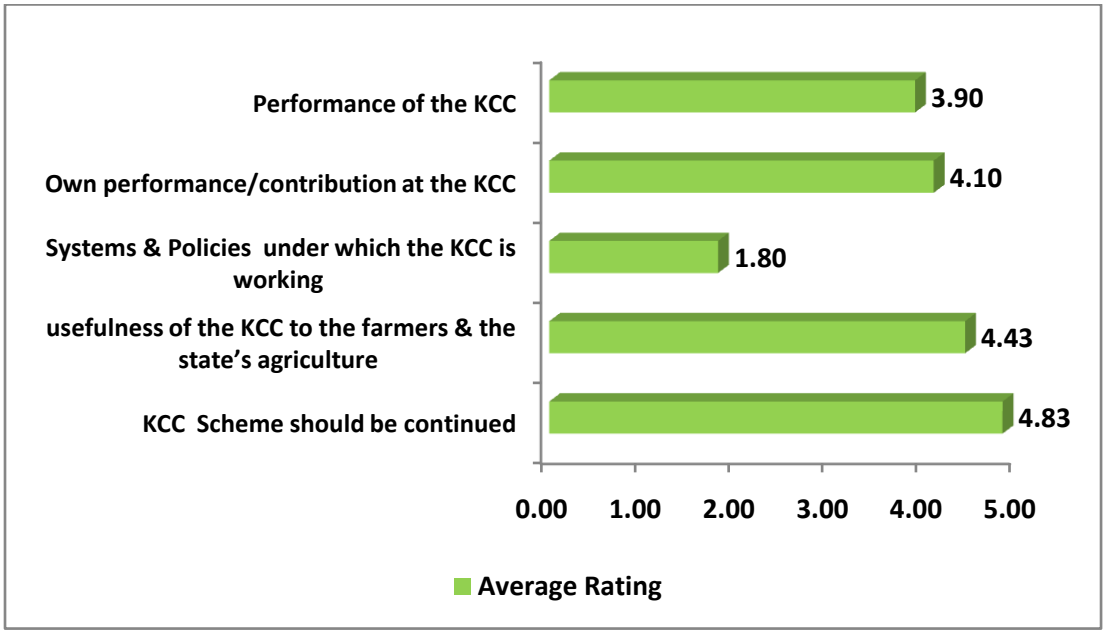
Ratings: Strongly Agree-5, Agree-4, Partially Agree-3, Disagree-2 and Strongly Disagree-1.
Source: Primary Survey.

**Table 4.22**
**Overall assessment of Kisan Call Centre – per cent**

| | Strongly Agree | Agree | Partially Agree | Dis-agree | Strongly Disagree | Average Rating |
|---|---|---|---|---|---|---|
| Please give your overall assessment of the performance of the Kisan Call Centre | 16.67 | 56.67 | 26.67 | 0.00 | 0.00 | 3.90 |
| Please give an overall assessment of your own performance/contribution at the Kisan Call Centre | 23.33 | 63.33 | 13.33 | 0.00 | 0.00 | 4.10 |
| Please give your overall assessment of the systems & policies under which the Kisan Call Centre is working | 0.00 | 0.00 | 13.33 | 53.33 | 33.33 | 1.80 |
| Please give your overall assessment about the usefulness of the Kisan Call Centre to the farmers & the state's agriculture | 46.67 | 50.00 | 3.33 | 0.00 | 0.00 | 4.43 |
| Please give your overall opinion whether the Kisan Call Centre Scheme should be continued | 83.33 | 16.67 | 0.00 | 0.00 | 0.00 | 4.83 |

Ratings: Strongly Agree-5, Agree-4, Partially Agree-3, Disagree-2 and Strongly Disagree-1.
Source: Primary Survey.

**Figure-4.5: Overall assessment of Kisan Call Centre**




## Summing-up

It was observed from the foregoing analysis that the majority of FTAs opined that the hardware was good enough for the work requirements. It was also recorded that at times, some calls get dropped or mishandled by the software and the existing software failed to check the repeated irrelevant calls. The internet service was reported to be slow when there was heavy call load in the Centre.

The findings of the study indicate that the FTAs in Guwahati Centre did not take any help from the University experts/Nodal officer in answering the farmer's questions. Further, no field inquiry was conducted by the KCC functionaries on its own. It was also observed that Government scheme related information was not updated on regular basis. So far as call efficiency was concerned, a large majority of the FTAs (70.00 per cent) reported it to be good enough in the KCC, Guwahati.

The Directorate of Extension Education, Assam Agricultural University, Jorhat was reported to be functioning as member of the Working Team of the KCC Nodal Cell for North-Eastern States. This Directorate is regularly providing technology backstopping to KCC Level-I and KCC Level-II experts by imparting trainings during *rabi* and *kharif* season to enrich their knowledge. In addition to this, IKSL was also providing training to the FTAs for updating their knowledge on hardware as well as software.

It was further observed from the analysis that majority of FTAs were quick in responding to the farmers' calls to the best of their efficiency. Besides, FTAs had sufficient knowledge and they were capable of answering the farmer's questions by themselves.

A significant numbers of calls were received daily by the FTAs and all the calls were handled efficiently. Moreover, cordial relationships were maintained between the farmers and the FTAs.

At overall level, the usefulness of the KCC was reiterated by the FTAs especially in the interest of the farmers in particular and the State agriculture in general.

In view of its continuous endeavour to help the farmers without losing much time and energy, all the FTAs recommended continuance of the Scheme with massive support from the Government.

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# CHAPTER - V

## Results: Farmers' Survey

In order to manage the farms successfully, the farmers should know some information on techno-economic issues relating to crop and livestock enterprise. This helps them to make correct decisions on some essential matters such as, what crop to plant, the variety to use, the inputs to apply, practices to follow *etc.* for better productivity and returns. With speedy development and scientific progress, the number of choices available and the knowledge-base of agriculture have increased manifold and has made decision making process more difficult these days. The KCC has been a major initiative by the Government of India to provide agri-based information over phone to the farmers. With high mobile penetration and growth of IT sector, a large number of farmers have started harnessing the benefits of KCC.

As per the methodology designed by the coordinating centre, as many as 100 farmers (covering 80 numbers of KCC user and 20 numbers of non-user) were interviewed to get their feedback on implementation of KCC. The results of the farmers' surveys are documented in the following paragraphs.

The sources of information/advice on farming its awareness, use and frequency of use in actual field conditions are shown in Table 5.1. The table shows that 100.00 per cent of the farmers were well aware of the activities of KCC and they used to ask for questions on different issues like what crop to plant, the variety to use, the inputs to apply, the insecticides/pesticides to use, practices to follow *etc*. in different crop season. Out of the total sample farmers, 78.75 per cent asked the questions frequently and the remaining 21.25 per cent made queries occasionally. It further indicates that 95.00 per cent of the farmers took advice from the fellow farmers, 86.25 per cent from the extension workers and another 70.00 per cent of the farmers obtained suggestions from the Input Dealers/Shops. In addition to these, the KVKs, meetings and demonstrations organized by different agencies and agricultural experts also provided information/advice on farm-related issues.

The average ratings as indicated in Table (5.1) shows that the highest rating was worked out against the fellow farmers (4.01) so far as sources of farm information was concerned, followed by Extension Workers (3.88), Kisan Call Centre (3.79) and meetings and demonstrations (3.73). This indicates that the fellow farmers, Extension Workers, KCC and meetings and demonstrations were the most important agencies to provide the vital advices to the sample farmers.

The different communication media and devices used as sources of information/awareness and use frequency are presented in Table 5.2. The table indicates that out of the total sample farmers, 68.75 per cent used internet and website to look for weather report and some technicalities relating to insecticides/pesticide application. Of the total internet user sample farmers, 34.55 per cent accessed the information frequently and the remaining 65.45 per cent used the same occasionally through their mobile phones. Moreover, Radio, Newspapers/magazines and T.V. were also found to be important sources of information/awareness in the state. However, the farmers of the sample area were not aware of the websites like KKMS, Farmers Portal, M-Kisan Portal *etc*.

The Table 5.2 further, shows that among the communication media the highest average rating was worked out against T.V. (4.41) followed by newspapers/magazines (3.57), Radio (3.40) and internet and websites (3.35). Evidently, role of ICT in the field of agriculture has conspicuously been recorded.

The sources of information/advice on farming, its awareness/usefulness and quality are shown in Table 5.3. The table indicates that 100.00 per cent of the sample farmers were well aware of the operation of the KCC and they made regular queries on different issues like what crop to plant, the variety to use, the inputs to apply, the insecticides/pesticides to use, practices to follow *etc*. during different crop season. The table also shows that out of the total sample farmers, 22.50 per cent farmers asked the questions frequently, 62.50 per cent of the farmers made queries occasionally and the remaining 15.00 per cent asked the queries rarely.

The table also indicates that 95.00 per cent of the sample farmers obtained information/advice on farming from their fellow farmers. In this regard, the sample farmers reported that the advices of the fellow farmers were more useful than that of KCC personnels as these pieces of advices were more suited to the local situation. So, 47.37 per cent of the sample farmers made queries frequently and 52.63 per cent made queries occasionally. Besides these, the quality advices received from the extension workers (86.25 per cent) were also beneficial to the sample farmers.

In course of the study, a few sample farmers reported that some technical terminologies prescribed for the insecticides and pesticides were not understandable to them. It was also reported by a sizeable number of sample farmers that most of the insecticides and pesticides were not available in the local markets as suggested by the KCC personnels. As such, the farmers were required to visit different places to arrange those agro-chemicals for which they had to spend additional money, time and energy. Therefore, the sample farmers opined that KCC personnels should be given exposure to real field and market information.

**Table 5.1**
**Sources of information/ advice on farming – awareness, use and frequency of use – per cent**

| | Awareness (Valid %) | Use (Valid %) | Very Fre-quently | Frequ-ently | Occasio-nally | Rarely | Never | Average |
|---|---|---|---|---|---|---|---|---|
| Fellow Farmers | 95.00 | 95.00 | 23.68 | 53.95 | 22.37 | 0.00 | 0.00 | 4.01 |
| Extension Worker | 86.25 | 86.25 | 24.64 | 39.13 | 36.23 | 0.00 | 0.00 | 3.88 |
| Input Dealers/ Shops | 70.00 | 70.00 | 0.00 | 0.00 | 94.64 | 5.36 | 0.00 | 2.95 |
| Cooperative societies | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Input Companies | 1.25 | 1.25 | 0.00 | 0.00 | 100.00 | 0.00 | 0.00 | 3.00 |
| Local Markets | 50.00 | 50.00 | 0.00 | 30.00 | 70.00 | 0.00 | 0.00 | 3.30 |
| Krishi Vigyan Kendra's (KVKs) | 50.00 | 50.00 | 0.00 | 27.50 | 72.50 | 0.00 | 0.00 | 3.28 |
| Agricultural Universities & their materials | 53.75 | 53.75 | 0.00 | 27.50 | 72.50 | 0.00 | 0.00 | 3.28 |
| Kisan melas/ summits | 5.00 | 5.00 | 0.00 | 0.00 | 100.00 | 0.00 | 0.00 | 3.00 |
| Meetings & demonstrations | 55.00 | 55.00 | 29.55 | 13.64 | 56.82 | 0.00 | 0.00 | 3.73 |
| Agriculture experts | 50.00 | 50.00 | 0.00 | 25.00 | 75.00 | 0.00 | 0.00 | 3.25 |
| Kisan Call Centre (KCC) | 100.00 | 100.00 | 0.00 | 78.75 | 21.25 | 0.00 | 0.00 | 3.79 |
| Other Call Centres (Specify) | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |

Ratings: Very Frequently-5, Frequently-4, Occasionally-3, Rarely-2 and Never-1.
Source: Primary Survey.

**Table 5.2**

**Communication media and devices used to source information/awareness and use frequency – per cent**

| | Awareness (Valid %) | Use (Valid %) | Very Frequently | Frequently | Occasionally | Rarely | Never | Average |
|---|---|---|---|---|---|---|---|---|
| Newspapers/magazines | 46.25 | 46.25 | 8.11 | 40.54 | 51.35 | 0.00 | 0.00 | 3.57 |
| Radio | 65.00 | 65.00 | 1.92 | 38.46 | 57.69 | 1.92 | 0.00 | 3.40 |
| TV | 36.25 | 36.25 | 51.72 | 37.93 | 10.34 | 0.00 | 0.00 | 4.41 |
| Mobile phone | 12.50 | 12.50 | 0.00 | 0.00 | 100.00 | 0.00 | 0.00 | 3.00 |
| Mobile Apps | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Computer | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Internet & websites | 68.75 | 68.75 | 0.00 | 34.55 | 65.45 | 0.00 | 0.00 | 3.35 |
| Kisan Knowledge Management System (KKMS) | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Farmer Portal | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| M-Kisan Portal (Mobile/SMS Service) | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |

Ratings: Very Frequently-5, Frequently-4, Occasionally-3, Rarely-2 and Never-1.

Source: Primary Survey.

**Table 5.3**
**Sources of information/advice on farming - awareness/usefulness and quality – per cent**

| | Awareness (Valid %) | Use (Valid %) | Very Fre-quently | Frequ-ently | Occasio-nally | Rarely | Never | Average |
|---|---|---|---|---|---|---|---|---|
| Fellow Farmers | 95.00 | 95.00 | 0.00 | 47.37 | 52.63 | 0.00 | 0.00 | 3.47 |
| Extension Worker | 86.25 | 86.25 | 0.00 | 47.83 | 52.17 | 0.00 | 0.00 | 3.48 |
| Input Dealers/ Shops | 70.00 | 70.00 | 0.00 | 0.00 | 53.57 | 32.14 | 14.29 | 2.39 |
| Cooperative societies | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Input Companies | 1.25 | 1.25 | 0.00 | 0.00 | 100.00 | 0.00 | 0.00 | 3.00 |
| Local Markets | 50.00 | 50.00 | 0.00 | 0.00 | 100.00 | 0.00 | 0.00 | 3.00 |
| Krishi Vigyan Kendra's (KVK's) | 50.00 | 50.00 | 0.00 | 12.50 | 67.50 | 20.00 | 0.00 | 2.93 |
| Agricultural Universities & their materials | 53.75 | 53.75 | 2.33 | 9.30 | 76.74 | 11.63 | 0.00 | 3.02 |
| Kisan melas/ summits | 5.00 | 5.00 | 0.00 | 0.00 | 100.00 | 0.00 | 0.00 | 3.00 |
| Meetings & demonstrations | 55.00 | 55.00 | 9.09 | 20.45 | 70.45 | 0.00 | 0.00 | 3.39 |
| Agriculture experts | 50.00 | 50.00 | 0.00 | 0.00 | 100.00 | 0.00 | 0.00 | 3.00 |
| Kisan Call Centre (KCC) | 100.00 | 100.00 | 0.00 | 22.50 | 62.50 | 15.00 | 0.00 | 3.08 |
| Other Call Centres (Specify) | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |

Ratings: Very Frequently-5, Frequently-4, Occasionally-3, Rarely-2 and Never-1.
Source: Primary Survey.

The average ratings indicated in Table 5.3 show that from the usefulness and quality and information point of view, the highest rating was found against extension workers (3.48), closely followed by fellow farmers (3.47), meetings and demonstrations (3.39) and Kisan Call Centre (3.08). The quality of information/advice provided by them was reported to be acceptable.

The communication media and devices used as source of information-awareness/use and quality are presented in Table 5.4. The table indicates that out of the total sample farmers, 68.75 (55 households) per cent used internet to look for weather report and scientific terminologies relating to insecticides/pesticides recommended. Out of total internet user farmers, 38.18 (21 households) per cent used the facility frequently and 61.82 (34 households) per cent, occasionally. In addition to internet, Radio, Newspapers/magazines and T.V. also provided quality information on crop cultivation for the benefits of the farmers.

The Table 5.4 further shows that the highest rating was worked out against internet and websites (3.38) followed by T.V. (3.17), newspapers/magazines (2.97) and radio (2.88). Figure-5.1 clearly depicts the average ratings of the communication media and devices used. The quality of information/advice obtained from these media and devices was reported to be fine and acceptable.

The type of ICT devices/features used and their usefulness are presented in Table 5.5. The ICT devices include Mobile phone, Landline, STD/PCO, Mobile Internet Connection, Broadband/Wi-Fi, Computer *etc.* The table indicates that 100.00 per cent of the sample farmers asked questions over mobile phone. It was reported during the data collection that the sample farmers were ignorant of the KCC websites or portals. 10.00 per cent of the total mobile phones owned by the farmers were reported to be excellent, 65.00 per cent of the mobile phones were found good and rest 25.00 per cent were observed to be satisfactory. The table further indicates that 68.75 per cent of the sample farmers had internet connection in their mobile phones. Use of Broadband/ Wi-Fi, Landline, STD/PCO, Computer *etc.* was not reported by the sample farmers. It was therefore seen that the types of ICT Devices/Features used by the sample farmers for crop cultivation were limited.

Table 5.5 also shows that the highest rating was recorded against mobile internet connection (4.38) followed by the mobile phones (3.85). The Figure-5.2 clearly indicates the average rating for various ICT devices/features used by the sample farmers and their usefulness.

Average number of calls per year is presented in Table 5.6. The table shows that a total of 1,698 numbers of calls were registered with the KCC during 2015-16 and 2016-17 in the sample districts. Total number of sample users was 80 (eighty). Average waiting time per call per households was 1.56 minutes. In this regard, majority of the sample farmers reported that due to poor network facility in the study area, it required more time to connect with the KCC system with their mobile phones.

The table also shows that call drop percentage was 9.01 and no proper answers were given for 3.71 per cent of the calls. However, 87.28 per cent of the calls were effectively answered as reported by the sample farmers. The table further reflects that out of total effectively answered calls, 65.08 per cent calls were related to technical information, 6.65 per cent calls were on price and market related information, 6.95 per cent calls were related to Government schemes, 8.36 per cent calls were weather related and the remaining 0.24 per cent of the calls were for other information like crop insurance, KCC loan *etc*. The Figure-5.3 (A) and Figure-5.3 (B) clearly indicate that the average number of calls per user per year.

Overall call response, efficiency and quality are presented in Table 5.7. The table shows that majority of the sample farmers observed that the toll free number was easy to reach the KCC. So, 32.50 per cent of the sample farmers made queries very frequently, 52.50 per cent made the queries frequently and the remaining 15.00 per cent of the sample farmers made queries occasionally. At the same time, 77.50 per cent of the sample farmers reported that the answers given by the KCC were useful and their problems were solved occasionally.

The highest rating, in Table 5.7, was worked out against the understanding level of the FTAs in local language (4.23) followed by ease to reaching KCC toll free number (4.18), clarity of answers given by the FTAs (3.89) and overall call handling and efficiency (3.88). The lowest average rating was seen at 1.00 for the escalated questions. There was no call escalation to higher level(s) as observed by the sample farmers. Overall call response, efficiency and quality of awareness given by the KCC are presented in Figure-5.4. At overall level, majority of the sample farmers opined that the call handling and efficiency in the KCC was good enough and the information provided to the farmers was also good and useful.

The responses to the questions raised by the farmers on technical aspects are presented in Table 5.8. More than 95.00 per cent of the sample farmers reported that the technical information were easily available through the KCC; they further opined that information were reliable and

**Table 5.4**

**Communication media and devices used to source information – awareness/use and quality – per cent**

| | Awareness (Valid %) | Use (Valid %) | Very Frequently | Frequently | Occasionally | Rarely | Never | Average |
|---|---|---|---|---|---|---|---|---|
| Newspapers/magazines | 46.25 | 46.25 | 0.00 | 5.41 | 86.49 | 8.11 | 0.00 | 2.97 |
| Radio | 65.00 | 65.00 | 0.00 | 3.85 | 82.69 | 11.54 | 1.92 | 2.88 |
| TV | 36.25 | 36.25 | 0.00 | 27.59 | 65.52 | 3.45 | 3.45 | 3.17 |
| Mobile phone | 12.50 | 12.50 | 0.00 | 0.00 | 100.00 | 0.00 | 0.00 | 3.00 |
| Mobile Apps | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Computer | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Internet & websites | 68.75 | 68.75 | 0.00 | 38.18 | 61.82 | 0.00 | 0.00 | 3.38 |
| Kisan Knowledge Management System (KKMS) | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Farmer Portal | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| M-Kisan Portal (Mobile/SMS Service) | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |

Ratings: Very Frequently-5, Frequently-4, Occasionally-3, Rarely-2 and Never-1.
Source: Primary Survey.

**.Table 5.5**

**Type of ICT devices/features used and their usefulness – per cent**

| | Owned | Used | Used for KCC/ Websites/Portals | Excellent | Good | Satisfactory | Somewhat Poor | Very Poor | Average |
|---|---|---|---|---|---|---|---|---|---|
| Mobile | 100.00 | 100.00 | 100.00 | 10.00 | 65.00 | 25.00 | 0.00 | 0.00 | 3.85 |
| Landline | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| STD/PCO | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Mobile Internet Connection | 68.75 | 68.75 | 0.00 | 38.18 | 61.82 | 0.00 | 0.00 | 0.00 | 4.38 |
| Broadband/ Wi-Fi | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Computer | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |

Ratings : Excellent - 5, Good - 4, Satisfactory - 3, Somewhat Satisfactory - 2 and Very Poor - 1.
Source: Primary Survey.

**Figure-5.1 : Average rating on communication media and devices used to source information – awareness/use and quality**

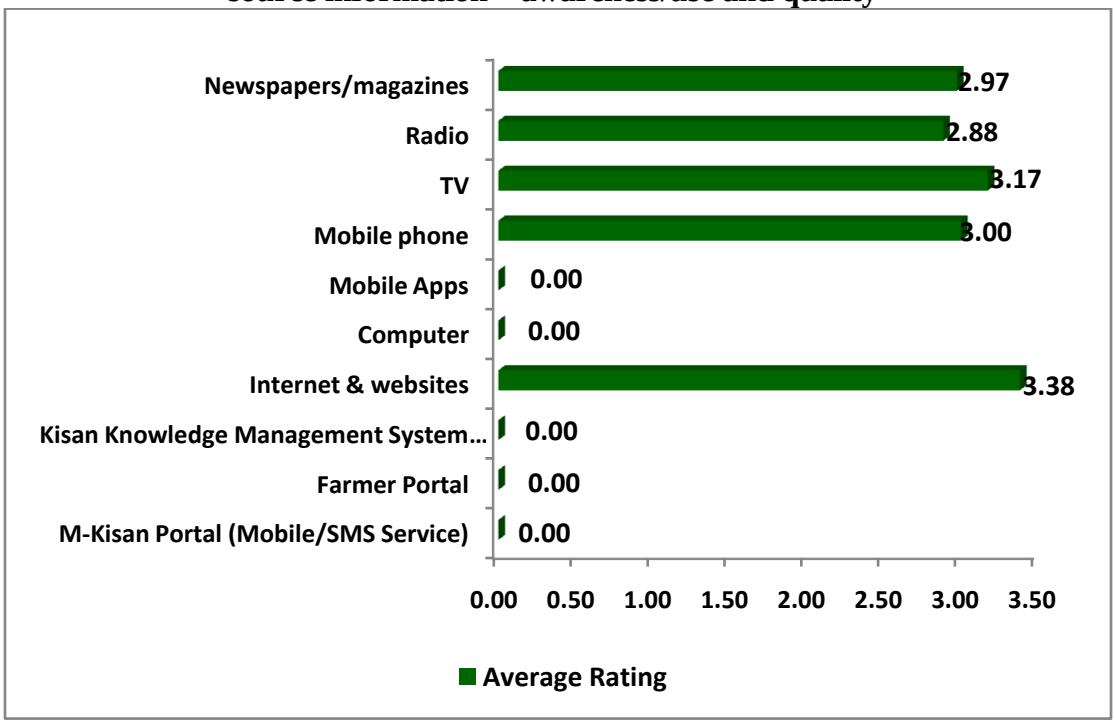



**Figure-5.2 : Average rating on type of ICT devices/features used and their usefulness**

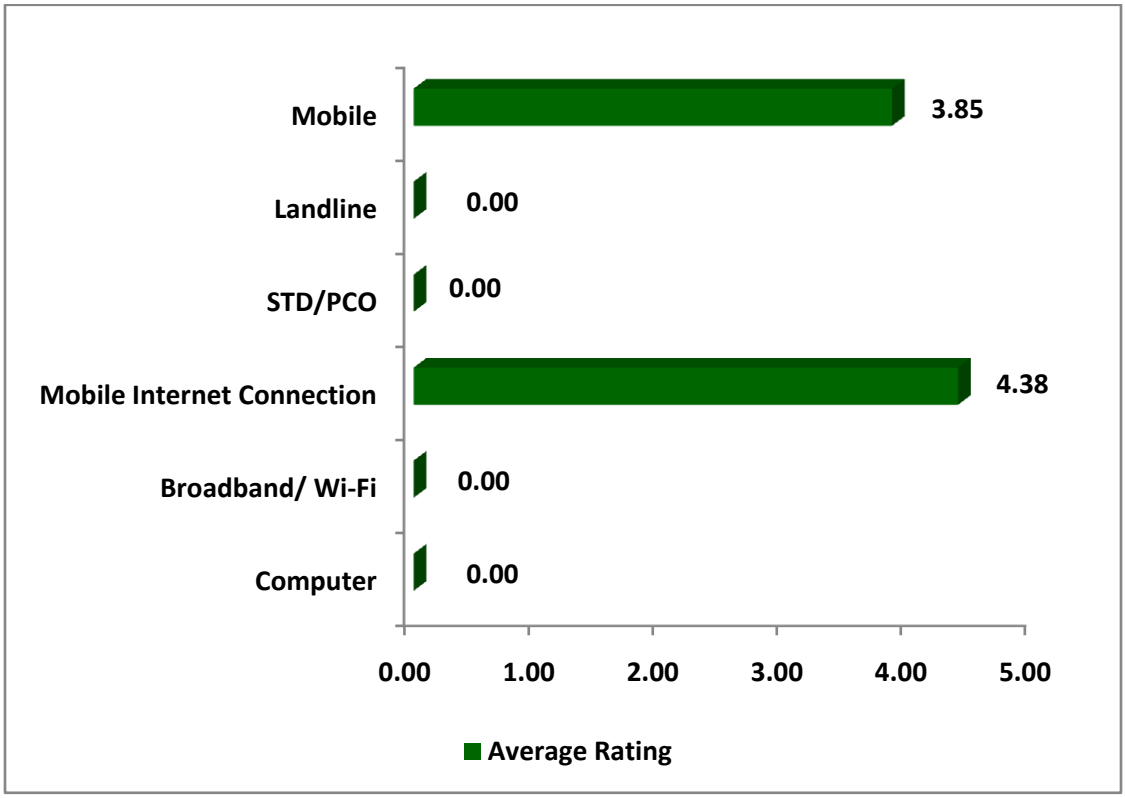


**Table 5.6**

**Average number of calls per user per year**

| | Nos. | Per cent |
|---|---|---|
| No. of calls made | 1698.00 | |
| Average waiting time (minutes per call) | 1.56 | 0.00 |
| No. of calls not answered | 0.00 | 0.00 |
| No. of calls dropped | 153.00 | 9.01 |
| No. of calls in which no proper answers were given | 63.00 | 3.71 |
| No. of calls effectively answered | 1482.00 | 87.28 |
| No. of calls for technical information | 1105.00 | 65.08 |
| No. of calls for price and market information | 113.00 | 6.65 |
| No. of calls for government scheme information | 118.00 | 6.95 |
| No. of calls for other information - weather | 142.00 | 8.36 |
| No. of calls for other information | 4.00 | 0.24 |
| No. of Sample farmers | 80.00 | |

Note: Percentage worked out to total households.
Source: Primary Survey.

**Figure-5.3 (A): Average number of calls per user per year**

(Figure based on Table 5.6)

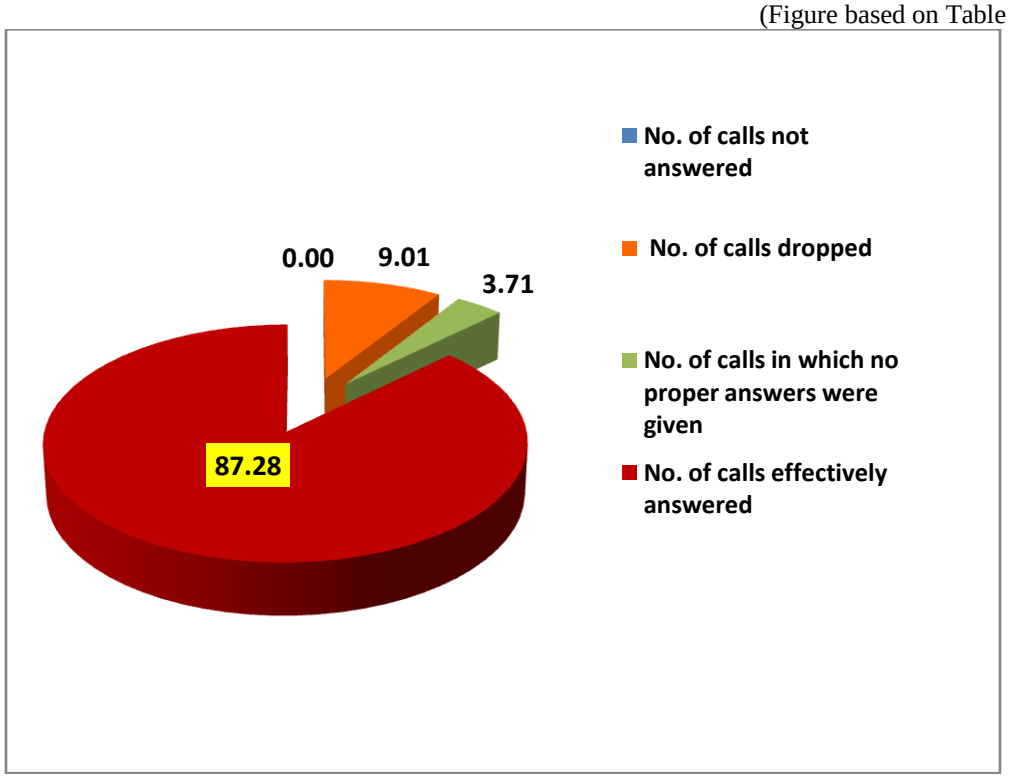
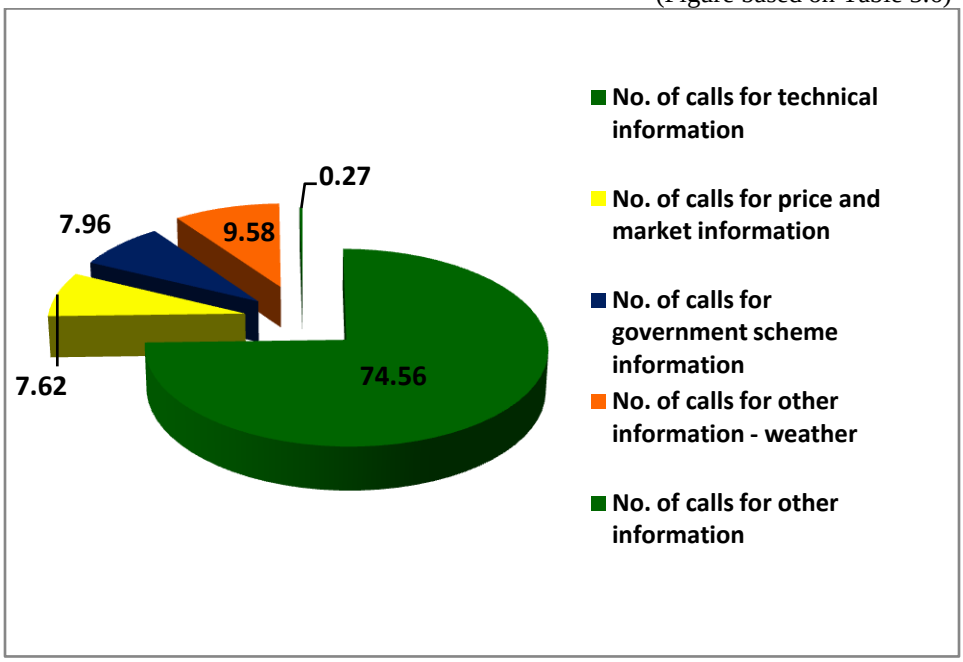


**Figure-5.3 (B): Average number of calls per user per year**

(Figure based on Table 5.6)




helpful (65.00 per cent), it was up-to-date (65.00 per cent) and easy to understand (71.25 per cent). Nearly, 48.75 per cent of the farmers were satisfied with the responses and information provided by the KCC, so they made the queries frequently. But, another 46.25 per cent of the sample farmers were partially satisfied with the responses for which they made the queries occasionally.

Rating wise, the highest rating was observed against easy availability of information (4.29) followed by easy of understandability (3.79), reliability (3.76), up-to-date record (3.65) and quick services (.3.64). At overall level, the farmers were satisfied with the response and information provided by the KCC (3.44), Guwahati.

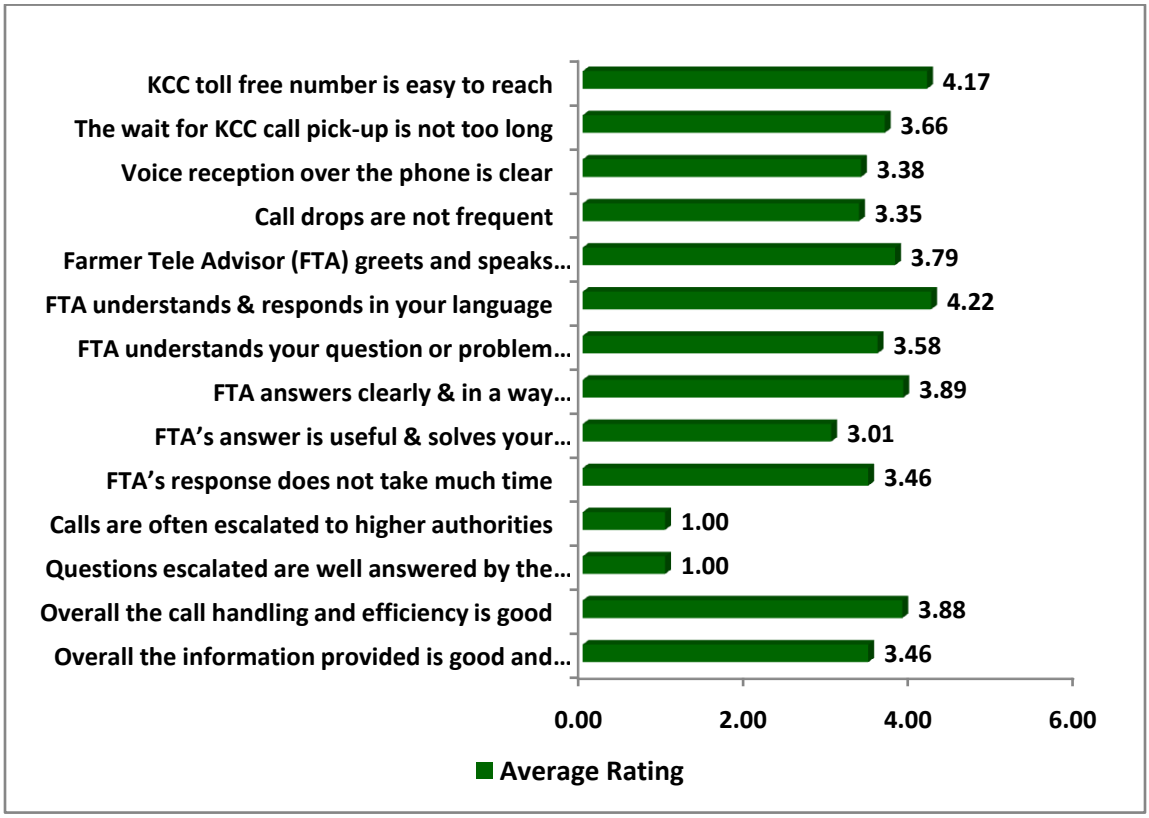
Responses to price and market related questions are indicated in Table 5.9. Nearly, 43.00 per cent of the sample farmers reported that the information were easily available through KCC. Another 35.00 per cent considered the information to be really reliable. On the other hand, the informations were rarely up-to-date as reported by 71.74 per cent of the sample farmers. Majority, of the sample farmers however noted that the information /advices were easy to understand and about 51.30 per cent of the sample farmers were occasionally benefited in terms of profit. By and large, 54.35 per cent of the sample farmers were satisfied with the response and information provided by the KCC, for which they made the queries occasionally and the

**Table 5.7**
**Overall call response, efficiency and quality – per cent**

| | Very Freque-ntly | Freque-ntly | Occasio-nally | Rarely | Never | Average Rating |
|---|---|---|---|---|---|---|
| KCC toll free number is easy to reach | 32.50 | 52.50 | 15.00 | 0.00 | 0.00 | 4.18 |
| The wait for KCC call pick-up is not too long | 5.00 | 60.00 | 31.25 | 3.75 | 0.00 | 3.66 |
| Voice reception over the phone is clear | 11.25 | 15.00 | 73.75 | 0.00 | 0.00 | 3.38 |
| Call drops are not frequent | 0.00 | 61.25 | 12.50 | 26.25 | 0.00 | 3.35 |
| Farmer Tele Advisor (FTA) greets and speaks courteously | 6.25 | 66.25 | 27.50 | 0.00 | 0.00 | 3.79 |
| FTA understands & responds in your language | 30.00 | 62.50 | 7.50 | 0.00 | 0.00 | 4.23 |
| FTA understands your question or problem easily | 5.00 | 47.50 | 47.50 | 0.00 | 0.00 | 3.58 |
| FTA answers clearly & in a way understandable to you | 12.50 | 67.50 | 16.25 | 3.75 | 0.00 | 3.89 |
| FTA's answer is useful & solves your problem/need | 1.25 | 10.00 | 77.50 | 11.25 | 0.00 | 3.01 |
| FTA's response does not take much time | 0.00 | 52.50 | 41.25 | 6.25 | 0.00 | 3.46 |
| Calls are often escalated to higher authorities | 0.00 | 0.00 | 0.00 | 0.00 | 100.00 | 1.00 |
| Questions escalated are well answered by the Agriculture Experts or Nodal Officer | 0.00 | 0.00 | 0.00 | 0.00 | 100.00 | 1.00 |
| Overall the call handling and efficiency is good | 17.50 | 52.50 | 30.00 | 0.00 | 0.00 | 3.88 |
| Overall the information provided is good and useful | 0.00 | 46.25 | 53.75 | 0.00 | 0.00 | 3.46 |

Ratings: Very Frequently-5, Frequently-4, Occasionally-3, Rarely-2 and Never-1.
Source: Primary Survey.

**Figure-5.4: Overall call response, efficiency and quality**




remaining 45.65 per cent were satisfied to a limited scale and therefore they made the queries rarely.

In term of average ratings, the highest rating was observed against quick information service (.3.50) followed by easy availability of information (3.43), reliability of information (3.41) and ease of understanding (3.35). Overall rating of 2.54 indicates that the sample farmers were not fully satisfied with the responses and information provided by the KCC especially on price and market related issues.

Responses to Government scheme related questions are presented in Table 5.10. The table indicates that majority (76.19 per cent) of the sample farmers reported that the relevant information were made available through KCC occasionally. Nearly, 54.76 per cent of the sample farmers considered the information to be rarely reliable and helpful and another 69.05 per cent reported that information were rarely up-to-date. About, 71.43 per cent of the sample farmers were hardly satisfied with the response and information provided by the KCC on Government schemes related issues, for which they raised the queries rarely.

The highest rating was observed against quick responses (3.55), followed by ease of understanding (3.36), and easy availability of information (3.19). As such, at overall level, the farmers were hardly satisfied with the response and information provided (2.36) by the KCC on Government scheme related matters.

Responses to other questions (weather, services, events *etc.*) are shown in Table 5.11. About 70.91 per cent of the sample farmers reported that information were easily available through KCC and 81.82 per cent observed that information/advice were easy to understand, reliable and helpful (56.36 per cent) and also up-to-date (83.64 per cent). Another, 89.09 per cent sample farmers reported that the responses from the KCC had helped them to improve their performance. At overall level, 81.82 per cent of the sample farmers were satisfied with the response and information provided by the KCC, so they made the queries occasionally.

From the foregoing analysis, it is observed that the sample farmers were not fully satisfied with the information provided by the KCC, particularly on price and market related questions and the government scheme related questions.

The Figure-5.5 clearly shows the overall satisfaction level of the sample farmers on responses of the KCC on technical information, price and market related information, Government schemes related information and other information in terms of percentage.

From ratings point of view, the highest average rating was observed against ease of understanding (3.82), followed by quick availability of information (3.80), easy availability (3.71) and information reliability (3.40). At overall level, the sample farmers were reasonably satisfied with the responses and information provided by the KCC (3.00).

The major objectives of the present study were to examine the performances of the KCC and its efficiency in providing information and guidance to the farmers to help them in taking right decisions, leading to improved performance of their farms. Accordingly, the study tried to ascertain what was happening in the farmer's level. Major objectives/decisions focus as perceived by the sample farmers are presented in Table 5.12. The table shows that out of the total sample farmers, more than 67.00 per cent considered good choice of crops/farm activities to be extremely important and another 68.75 per cent focussed more importance on high yield of crops. Again, out of the total sample farmers, 70.00 per cent of the farmers imparted high weightage on marketability of output, 95.00 per cent on personal safety and health (by using of mask *etc.*), 52.50 per cent on creating self image in the community (like progressive farmers) and

**Table 5.8**

**Response to questions on technical aspects – per cent**

| | Very Frequently | Frequently | Occasionally | Rarely | Never | Average Rating |
|---|---|---|---|---|---|---|
| Information is easily available through KCC | 33.75 | 61.25 | 5.00 | 0.00 | 0.00 | 4.29 |
| Information is reliable & helpful | 11.25 | 53.75 | 35.00 | 0.00 | 0.00 | 3.76 |
| Information is up-to-date | 10.00 | 55.00 | 25.00 | 10.00 | 0.00 | 3.65 |
| Information is provided quickly | 11.25 | 41.25 | 47.50 | 0.00 | 0.00 | 3.64 |
| Information/advise is easy to understand | 11.25 | 60.00 | 25.00 | 3.75 | 0.00 | 3.79 |
| Information/advise is useful & improves your performance/profits | 5.00 | 36.25 | 50.00 | 8.75 | 0.00 | 3.38 |
| You are satisfied with the response & information provided | 0.00 | 48.75 | 46.25 | 5.00 | 0.00 | 3.44 |

Ratings: Very Frequently-5, Frequently-4, Occasionally-3, Rarely-2 and Never-1.



**Table 5.9**

**Response to price and market related questions – per cent**

| | Very Frequently | Frequently | Occasionally | Rarely | Never | Average Rating |
|---|---|---|---|---|---|---|
| Information is easily available through KCC | 21.74 | 21.74 | 34.78 | 21.74 | 0.00 | 3.43 |
| Information is reliable & helpful | 8.70 | 28.26 | 58.70 | 4.35 | 0.00 | 3.41 |
| Information is up-to-date | 4.35 | 15.22 | 6.52 | 71.74 | 2.17 | 2.48 |
| Information is provided quickly | 19.57 | 17.39 | 56.52 | 6.52 | 0.00 | 3.50 |
| Information/ Advise is easy to understand | 0.00 | 36.96 | 60.87 | 2.17 | 0.00 | 3.35 |
| Information/advise is useful & improves your performance/ profits | 0.00 | 4.35 | 51.30 | 44.35 | 0.00 | 2.60 |
| You are satisfied with the response & information provided | 0.00 | 0.00 | 54.35 | 45.65 | 0.00 | 2.54 |

Ratings: Very Frequently-5, Frequently-4, Occasionally-3, Rarely-2 and Never-1.
Source: Primary Survey.

**Table 5.10**

**Response to government schemes related questions – per cent**

| | Very Frequently | Frequently | Occasionally | Rarely | Never | Average Rating |
|---|---|---|---|---|---|---|
| Information is easily available through KCC | 4.76 | 14.29 | 76.19 | 4.76 | 0.00 | 3.19 |
| Information is reliable & helpful | 0.00 | 19.05 | 26.19 | 54.76 | 0.00 | 2.64 |
| Information is up-to-date | 0.00 | 14.29 | 16.67 | 69.05 | 0.00 | 2.45 |
| Information is provided quickly | 2.38 | 50.00 | 47.62 | 0.00 | 0.00 | 3.55 |
| Information/ Advise is easy to understand | 4.76 | 26.19 | 69.05 | 0.00 | 0.00 | 3.36 |
| Information/Advise is useful & improves your performance/profits | 0.00 | 4.76 | 28.57 | 66.67 | 0.00 | 2.38 |
| You are satisfied with the response & information provided | 0.00 | 7.14 | 21.43 | 71.43 | 0.00 | 2.36 |

Ratings: Very Frequently-5, Frequently-4, Occasionally-3, Rarely-2 and Never-1.
Source: Primary Survey.

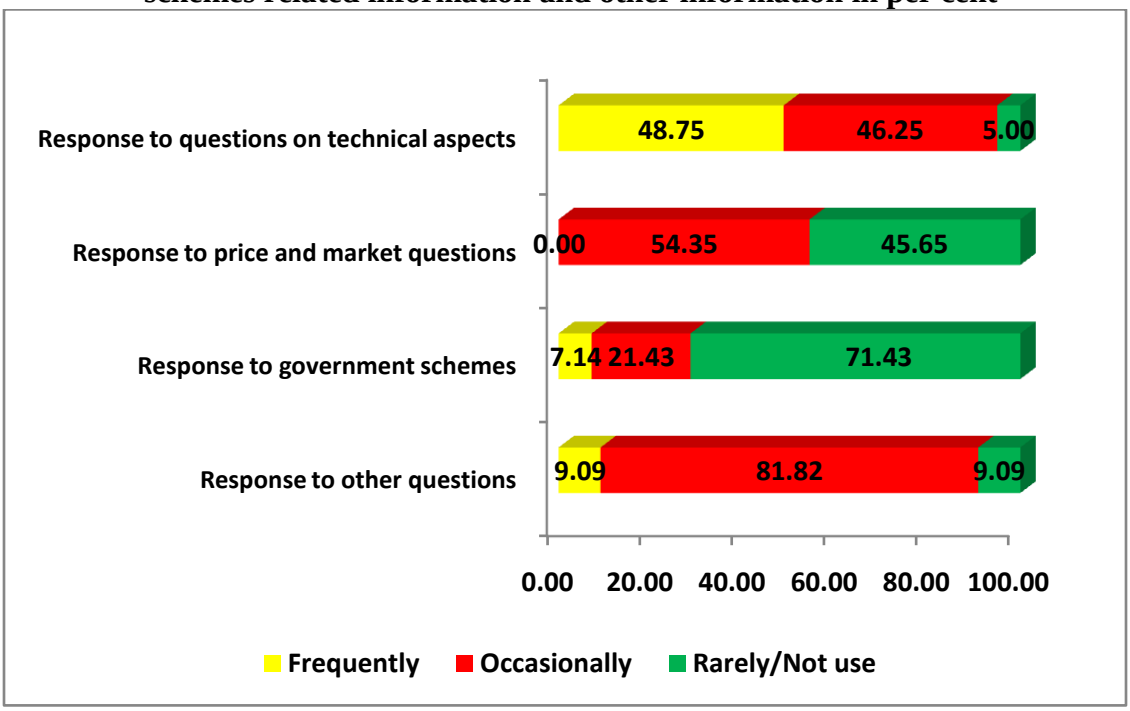
**Table 5.11**

**Response to other questions (weather, services, events *etc.*) – per cent**

| | Very Frequently | Frequently | Occasionally | Rarely | Never | Average Rating |
|---|---|---|---|---|---|---|
| Information is easily available through KCC | 0.00 | 70.91 | 29.09 | 0.00 | 0.00 | 3.71 |
| Information is reliable & helpful | 0.00 | 41.82 | 56.36 | 1.82 | 0.00 | 3.40 |
| Information is up-to-date | 0.00 | 1.82 | 83.64 | 14.55 | 0.00 | 2.87 |
| Information is provided quickly | 14.55 | 50.91 | 34.55 | 0.00 | 0.00 | 3.80 |
| Information/ Advise is easy to understand | 1.82 | 81.82 | 12.73 | 3.64 | 0.00 | 3.82 |
| Information/ Advise is useful & improves your performance/ profits | 0.00 | 1.82 | 89.09 | 9.09 | 0.00 | 2.93 |
| You are satisfied with the response & information provided | 0.00 | 9.09 | 81.82 | 9.09 | 0.00 | 3.00 |

Ratings: Very Frequently-5, Frequently-4, Occasionally-3, Rarely-2 and Never-1.
Source: Primary Survey.

**Figure-5.5 : Overall satisfaction by the sample farmers on responses of the KCC on technical information, price and market related information, Government schemes related information and other information in per cent**




another 52.50 per cent of the farmers found long term productivity of crops (mainly horticultural crops) to be very important. Also, a sizeable portion of the sample farmers considered quality of output, efficient input use and least cost of production to be important enough with varying degrees.

While working out the average ratings, it was noted that the highest rating was observed against personal safety and health (4.18), followed by personal achievement/knowledge (4.05), high yields (3.88), own consumption needs (3.78), good choice of crops/farm activities (3.76), efficient input use (3.70), marketability of output (3.69) and good quality of output (3.64). Thus, from the above analysis it can be inferred that the information and advice obtained from the KCC had helped/benefitted the sample farmers in taking various farming decision.

Kisan Call Centre was established for providing working solutions to different problems of the farmers in the State. Farmers from different areas ask questions on their problems and the staff working with the KCC is available to solve the problems by giving answers to those questions. The KCCs are more effective in rural and backward areas where extension service outreach is difficult. Therefore, the present study attempted to examine how far the KCC was

able to solve the problems of the farmer in taking right type of decision. Important decision making issues are presented in Table 5.13.

The table indicates that out of the total sample farmers, more than 71.00 per cent considered crop selection decision to be extremely important or very important. Same level of importance was noticed for the decisions pertaining to variety selection (88.75 per cent); fertilizer/feed application (92.50 per cent); insect pest control (96.25 per cent); disease control (71.00 per cent); weed control (62.00 per cent) and quality improvement (85.00 per cent).

On the other hand, moderately important decisions as perceived by the sample farmers included planting decisions (58.75 per cent), weather/rainfall decisions (50.00 per cent) and harvesting and post harvest decisions (56.25 per cent). From the foregoing analysis, it is observed that majority of the sample farmers used to take the decisions based on the information inputs received from the KCC.

However, the highest rating was worked out against variety selection decisions (4.31) followed by insect pest control decisions (4.30), fertilizer/feed application decisions (4.18), quality improvement decisions (4.08), weed control decisions (3.93), crop selection decisions (3.85), input purchase decisions (3.74), disease control decisions (3.71), planting decisions (3.61) and crop management decisions (3.50). These decisions were considered to be very important and moderately important by the sample farmers.

Impact of KCC on important decision making is presented in the Table 5.14 (a). The impact was assessed under several categories like huge impact, significant impact, moderate impact, small impact and no impact on farming practices. The variety selection decisions were reported to have huge impact (21.25 per cent), significant impact (41.25 per cent) and moderate impact (37.50 per cent) according to the farmers' survey. Similarly, the input purchase decisions bore huge impact (5.00 per cent), significant impact (53.75 per cent) and moderate impact (41.25 per cent) as perceived by the sample farmers. In case of fertilizer/feed application decision, 18.75 per cent of the sample farmers noted huge impact, 56.25 per cent observed significant impact and 25.00 per cent of the sample farmers reported moderate impact. Likewise, for weather/rainfall related decisions, 7.50 per cent of the sample farmers reported huge impact, 31.25 per cent observed significant impact, 50.00 per cent found moderate impact and the remaining 11.25 per cent of the sample farmers reported small impact. Similarly, in crop management decisions,

**Table 5.12**
**Major objectives/decisions focus as perceived by the farmers – per cent**

| | Extremely Important | Very Important | Moderately Important | Slightly Important | Not Important | Average |
|---|---|---|---|---|---|---|
| Good Choice of Crops/Farm activities | 12.50 | 55.00 | 28.75 | 3.75 | 0.00 | 3.76 |
| High Yields | 18.75 | 50.00 | 31.25 | 0.00 | 0.00 | 3.88 |
| Good Quality of Output | 17.50 | 28.75 | 53.75 | 0.00 | 0.00 | 3.64 |
| Efficient Input Use | 18.75 | 32.50 | 48.75 | 0.00 | 0.00 | 3.70 |
| Least Cost of Production | 1.25 | 31.25 | 60.00 | 7.50 | 0.00 | 3.26 |
| Marketability of Output | 12.50 | 57.50 | 16.25 | 13.75 | 0.00 | 3.69 |
| Best Price for Output | 1.25 | 2.50 | 45.00 | 48.75 | 2.50 | 2.51 |
| Best Profits/ Income | 0.00 | 33.75 | 47.50 | 18.75 | 0.00 | 3.15 |
| Least Crop Loss | 1.25 | 11.25 | 51.25 | 36.25 | 0.00 | 2.78 |
| Less Risk | 0.00 | 10.00 | 82.50 | 7.50 | 0.00 | 3.03 |
| Own Consumption Needs | 17.50 | 42.50 | 40.00 | 0.00 | 0.00 | 3.78 |
| Personal Safety & Health | 22.50 | 72.50 | 5.00 | 0.00 | 0.00 | 4.18 |
| Personal Achievement/Knowledge | 13.75 | 77.50 | 8.75 | 0.00 | 0.00 | 4.05 |
| Respect/Image in Community | 0.00 | 52.50 | 41.25 | 6.25 | 0.00 | 3.46 |
| Long Term Productivity | 0.00 | 52.50 | 20.00 | 26.25 | 1.25 | 3.24 |
| Better Environment | 0.00 | 13.75 | 33.75 | 40.00 | 12.50 | 2.49 |
| Others | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |

Ratings : Extremely Important-5, Very Important-4, Moderately Important-3, Slightly Important-2 and Not Important-1.
Source: Primary Survey.

27.50 per cent observed significant impact, 67.50 per cent observed moderate impact and 5.00 per cent of the sample farmers reported small impact.

In regard to insect/pest control decision, 23.75 per cent of the sample farmers found huge impact, 51.25 per cent reported significant impact and 25.00 per cent observed moderate impact. In case of disease control decision, 12.50 per cent of the sample farmers reported huge impact, 48.75 per cent found significant impact, 13.75 per cent observed moderate impact and the rest 25.00 per cent of the sample farmers reported small impact. In respect of weed control decisions, 26.25 per cent of the sample farmers reported huge impact, 32.50 per cent found significant impact and 41.25 per cent of the sample farmers observed moderate impact of the inputs and advice received from the KCC. The Figure-5.6 clearly shows the impact of KCC on important farm decisions in terms of percentage.

Table 5.14 (b) shows the impact of KCC on important decision areas in condensed form and also average rating of important decision rating process. The table indicates that the highest rating was worked out against insect pest control decisions (3.99) followed by fertilizer/feed application decisions (3.94), weed control decisions (3.85), variety selection decisions (3.84), input purchase decisions (3.64), disease control decisions (3.49), weather/ rainfall related decisions (3.35) and crop management decisions (3.23). Thus, one can very well infer that there had been huge impact to moderate impact of KCC activities especially in taking various farming decisions by the sample farmers.

The analysis has adequately established that majority of the sample farmers used to receive valuable suggestions/advices from the KCC from time to time, which helped them taking right kind of decisions for crop cultivation. On the other hand, the non-user sample farmers remained deprived of such valuable suggestions/advices from the KCC. During the field survey, the non-user sample farmers reported that they were not aware of the activities or role of the KCC, for which, they did not registered with the Kisan Call Centre.

Overall assessment of the KCC by the sample farmers is presented in Table 5.15. The table shows that 23.75 per cent of the sample farmers strongly agreed to the performance of the KCC at overall level. Another, 57.50 per cent of the sample farmers agreed and the remaining 18.75 per cent partially agreed with the overall performance of the KCC. Similarly, 5.00 per cent of the sample farmers strongly agreed, 61.25 per cent of the sample farmers agreed and the rest 33.75 per cent partially agreed to overall responses and efficiency of the KCC. In similar way,

**Table 5.13**

**Importance of KCC on important decisions making – per cent**

| | Extremely Important | Very Important | Moderately Important | Slightly Important | Not Important | Average |
|---|---|---|---|---|---|---|
| Crop selection decisions | 13.75 | 57.50 | 28.75 | 0.00 | 0.00 | 3.85 |
| Variety selection decisions | 42.50 | 46.25 | 11.25 | 0.00 | 0.00 | 4.31 |
| Input purchase decisions | 10.00 | 53.75 | 36.25 | 0.00 | 0.00 | 3.74 |
| Planting decisions | 20.00 | 21.25 | 58.75 | 0.00 | 0.00 | 3.61 |
| Soil management decisions | 13.75 | 30.00 | 38.75 | 17.50 | 0.00 | 3.40 |
| Fertilizer/feed application decisions | 25.00 | 67.50 | 7.50 | 0.00 | 0.00 | 4.18 |
| Water management decisions | 6.25 | 18.75 | 43.75 | 31.25 | 0.00 | 3.00 |
| Weather/rainfall related decisions | 7.50 | 31.25 | 50.00 | 11.25 | 0.00 | 3.35 |
| Crop management decisions | 1.25 | 52.50 | 41.25 | 5.00 | 0.00 | 3.50 |
| Agricultural machinery decisions | 0.00 | 10.00 | 10.00 | 80.00 | 0.00 | 2.30 |
| Insect pest control decisions | 33.75 | 62.50 | 3.75 | 0.00 | 0.00 | 4.30 |
| Disease control decisions | 18.75 | 52.50 | 13.75 | 11.25 | 3.75 | 3.71 |
| Weed control decisions | 30.00 | 32.50 | 37.50 | 0.00 | 0.00 | 3.93 |
| Cost reduction/ efficiency increasing decisions | 0.00 | 27.50 | 50.00 | 22.50 | 0.00 | 3.05 |
| Quality improvement decisions | 22.50 | 62.50 | 15.00 | 0.00 | 0.00 | 4.08 |
| Harvesting & post-harvest decisions | 13.75 | 10.00 | 56.25 | 20.00 | 0.00 | 3.18 |
| Marketing decisions | 11.25 | 12.50 | 41.25 | 33.75 | 1.25 | 2.99 |
| Price & profit related decisions | 0.00 | 6.25 | 35.00 | 53.75 | 5.00 | 2.43 |
| Supply chain & transport decisions | 0.00 | 0.00 | 16.25 | 70.00 | 13.75 | 2.03 |
| Storage decisions | 0.00 | 22.50 | 27.50 | 50.00 | 0.00 | 2.73 |
| Risk reduction decisions | 0.00 | 20.00 | 17.50 | 37.50 | 25.00 | 2.33 |
| Credit decisions | 3.75 | 17.50 | 16.25 | 62.50 | 0.00 | 2.63 |
| Insurance decisions | 0.00 | 18.75 | 13.75 | 42.50 | 25.00 | 2.26 |
| Government schemes & assistance decisions | 0.00 | 0.00 | 46.25 | 51.25 | 2.50 | 2.44 |
| Other decisions | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |

Source: Primary Survey. (Ratings: Extremely Important-5, Very Important-4, Moderately Important-3, Slightly Important-2 and Not Important-1)

3.75 per cent of the sample farmers strongly agreed, 48.75 per cent of the sample farmers agreed and 47.50 per cent of the sample farmers partially agreed to overall quality of information provided by the KCC. Considering its importance and impact, 16.25 per cent of the sample farmers strongly agreed, 62.50 per cent agreed and 21.25 per cent of the sample farmers partially agreed to continuance of the KCC scheme in the interest of the farmers.

The average rating indicates that the highest rating was worked out against overall performance of the KCC (4.05), followed by continuance of the KCC (3.95), overall response and efficiency of the KCC (3.71) and overall quality of information provided by the KCC (3.56).

It was also reported by the sample farmers that the KCC provided valuable suggestions/advices for the benefits of the farmers. It was pointed out that there were no other agencies or department in the State which can communicate with the farmers directly and provide solutions to their problems instantly.

## Summing-up

Agriculture is considered as the mainstay of the economy of Assam and plays a vital role in the socio-economic transformation of the state. As per 2011 census, the majority of the populations (86.00 per cent) are living in the rural areas and more than 70.00 per cent of the total population are drawing their livelihood from agriculture and allied sectors.

The findings of the study show that 100.00 per cent of the sample farmers were well aware of the activities of the KCC and they usually asked questions on different issues like, what crop to plant, the variety to use, the inputs to apply, the insecticides/pesticides to use, appropriate practices to follow *etc*. in different crop season. In addition, KVKs, meetings and demonstrations and agriculture experts also played significant roles in providing valuable information/advice on farming practices.

It was further observed that out of the total sample farmers, 68.75 per cent farmers used internet from their mobile phones, usually to look for weather report and other information. No other ICT devices like Broadband/Wi-Fi, Landline, STD/PCO, Computer *etc.* were reported in the study area. Thus, the types of ICT Devices/Features used by the farmers in respect of crop cultivation in the State were limited. Further, Radio, Newspapers/magazines and T.V. were also important sources of information/awareness for the farmers. It was noted that the sample farmers were not aware of other related websites like KKMS, Farmers Portal, M-Kisan Portal *etc*.

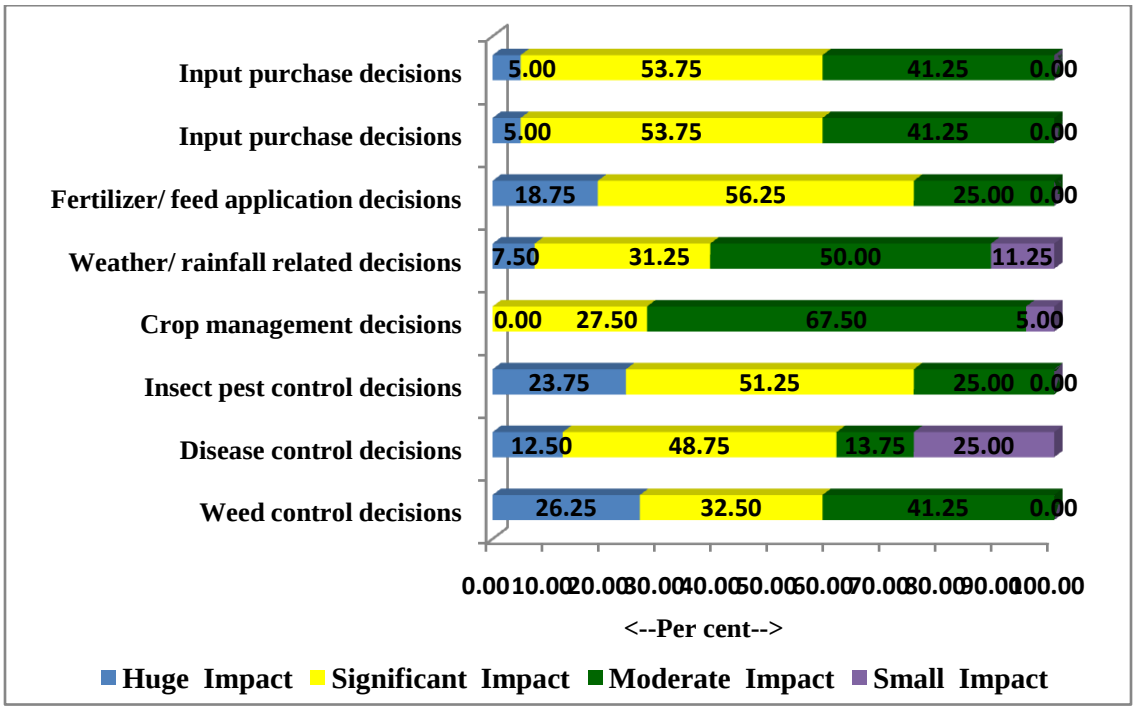
**Table 5.14 (a)**

**Impact of KCC on important decisions making – per cent**

| | Huge Impact | Significant Impact | Moderate Impact | Small Impact | No Impact | Average |
|---|---|---|---|---|---|---|
| Crop selection decisions | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Variety selection decisions | 21.25 | 41.25 | 37.50 | 0.00 | 0.00 | 3.84 |
| Input purchase decisions | 5.00 | 53.75 | 41.25 | 0.00 | 0.00 | 3.64 |
| Planting decisions | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Soil management decisions | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Fertilizer/ feed application decisions | 18.75 | 56.25 | 25.00 | 0.00 | 0.00 | 3.94 |
| Water management decisions | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Weather/ rainfall related decisions | 7.50 | 31.25 | 50.00 | 11.25 | 0.00 | 3.35 |
| Crop management decisions | 0.00 | 27.50 | 67.50 | 5.00 | 0.00 | 3.23 |
| Agricultural machinery decisions | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Insect pest control decisions | 23.75 | 51.25 | 25.00 | 0.00 | 0.00 | 3.99 |
| Disease control decisions | 12.50 | 48.75 | 13.75 | 25.00 | 0.00 | 3.49 |
| Weed control decisions | 26.25 | 32.50 | 41.25 | 0.00 | 0.00 | 3.85 |
| Cost reduction/ efficiency increasing decisions | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Quality improvement decisions | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Harvesting & post-harvest decisions | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Marketing decisions | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Price & profit related decisions | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Supply chain & transport decisions | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Storage decisions | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Risk reduction decisions | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Credit decisions | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Insurance decisions | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Government schemes & assistance decisions | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Other decisions | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |

(Ratings : Huge Impact -5, Significant Impact -4, Moderate Impact -3, Small Impact -2 and No Impact -1)

**Figure-5.6: Impact of KCC on important decisions (Farm decisions)-per cent**




Majority of the sample farmers observed that the toll free number was easy to connect with the KCC. Therefore, 32.50 per cent of the sample farmers made queries very frequently, 52.50 per cent made queries frequently and the remaining 15.00 per cent of the sample farmers made queries occasionally through their mobile phones. About 70.00 per cent of the sample farmers reported that the call handling and efficiency of the Centre was good enough and the information provided to them was also good and useful to them.

The findings further indicate that the sample farmers were not fully satisfied with the information provided by the KCC, particularly on price and market related queries and the Government scheme related questions.

The study also shows that majority of the sample farmers used to receive valuable suggestions/advices from the KCC, which helped them to take right kind of decisions for their crop cultivation. As a result, the farmers were benefited significantly. On the other hand, the non-user sample farmers remained deprived of such valuable suggestions/advices from the KCC. The entire lot of non-user sample farmers reported that they were not aware of the activities or roles of the KCC, for which they were not registered with the Call Centre.

**Table 5.14 (b)**
**Impact of KCC on important decisions – per cent**

| | Variety selection decisions | Input purchase decisions | Fertilizer/feed application decisions | Weather/ rainfall related decisions | Crop management decisions | Insect pest control decisions | Disease control decisions | Weed control decisions |
|---|---|---|---|---|---|---|---|---|
| Huge Impact | 21.25 | 5.00 | 18.75 | 7.50 | 0.00 | 23.75 | 12.50 | 26.25 |
| Significant Impact | 41.25 | 53.75 | 56.25 | 31.25 | 27.50 | 51.25 | 48.75 | 32.50 |
| Moderate Impact | 37.50 | 41.25 | 25.00 | 50.00 | 67.50 | 25.00 | 13.75 | 41.25 |
| Small Impact | 0.00 | 0.00 | 0.00 | 11.25 | 5.00 | 0.00 | 25.00 | 0.00 |
| No Impact | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Average | 3.84 | 3.64 | 3.94 | 3.35 | 3.23 | 3.99 | 3.49 | 3.85 |

Ratings : Huge Impact -5, Significant Impact t- 4, Moderate Impact -3, Small Impact - 2 and No Impact -1.
Source : Primary Survey.



**Table 5.15**
**Overall assessment – per cent**

| | Strongly Agree | Agree | Partially Agree | Disagree | Strongly Disagree | Average Rating |
|---|---|---|---|---|---|---|
| Overall assessment of the performance of the Kisan Call Centre | 23.75 | 57.50 | 18.75 | 0.00 | 0.00 | 4.05 |
| Overall assessment for the response and efficiency of Kisan Call Centre | 5.00 | 61.25 | 33.75 | 0.00 | 0.00 | 3.71 |
| Overall assessment of the quality of information provided by Kisan Call Centre | 3.75 | 48.75 | 47.50 | 0.00 | 0.00 | 3.56 |
| Overall opinion whether the Kisan Call Centre should be continued | 16.25 | 62.50 | 21.25 | 0.00 | 0.00 | 3.95 |

Ratings: Strongly Agree-5, Agree-4, Partially Agree-3, Disagree-2 and Strongly Disagree-1.
Source : Primary Survey.

Regarding continuation of the KCC scheme in the state, majority of the sample farmers opined that the scheme should be continued with renewed vigour and adequate support from theGovernment as the KCC helped the farmers to solve their problem instantly from 6.00 am to 10.00 pm everyday round the year. The sample farmers further reported that the scheme provides valuable suggestions/advices for upliftment of agriculture and no other agency or department in the State communicates directly with the farmers and offers solutions to their problems instantly and as such, the KCC scheme should be continued in the interest of the farming community of the State.

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# CHAPTER - VI

# Constraints, Recommendations and Conclusion

## Constraints identified

The present study has sufficiently established that the KCC is providing valuable suggestions/advices to the farmers on technical, functional and economic matters to take right decision for their farms. Yet, there exist problems and difficulties encountered by different stakeholders in course of programme implementation. Based on the opinions of the Supervisor, FTAs and sample KCC users/farmers, some of the issues were considered as major problems and are discussed below.

1. **Inadequate infrastructure support**

It was emerged several visits to the KCC, Guwahati the dimension of the authority room (1000 sq. fit. approx.) where as many as 30 FTAs are working from 6.00 am. to 10.00 pm. everyday is quite inadequate. Furnishing arrangements are also far from satisfactory. A good ambiance is a precondition for enhanced efficiency in any organization which really need attention. Further many a time, the existing software badly failed to prevent repeated irrelevant calls and abusive languages. Occasional machine failure and slow net connectivity were yet other important problems. Also, no published literature like extension booklets, books and papers are being provided to the KCC staff for continuous updating of their knowledge base.

2. **Lack of field/practical exposure on the part of FTAs**

The finding of the study reveals that lack of field/practical exposure in request of the FTAs was major hindrance for the farmers. Field visits or field tour programme by the FTAs are not covered under the KCC scheme. Most of the agro-chemicals, insecticides/pesticides as suggested by the FTAs were not available in the local markets. Hence, the farmers were to move from one place to another, looking for the same and in the process, sizeable amount of money, time and energy are lost. Therefore, it was considered as a major problem by the sample farmers.

3. **Lack of co-ordination among the different departments of the State Government and with the KCC**

The study shows that there were no co-ordination among the different line Departments of the State Government and also with the KCC and hence, some information lying with other

departments are lost in transit or are delayed in reaching the clients. So, it was considered as a problem for KCC functionaries.

4. **Lack of regular training for the FTAs**

The study indicates that the training programmes for the FTAs were not being arranged on regular basis. The training programme, whenever arranged, was mostly restricted to classroom only, and no field exposure was given to the FTAs. Further, subject specific trainings and training on programme implementation of Government schemes were very much lacking. So, it was considered as a significant weakness of the system.

5. **Lack of regular updates of the Government scheme related information**

The findings of study shows that the Government scheme related issues, particularly, price and market information was not regularly updated by the Government officials. So, it was difficult on the part of the KCC functionaries to provide the required information to the farmers within a short time. As a result, out of the total sample farmers, only 22.50 per cent used to ask the questions frequently, 65.50 per cent made the queries occasionally and 15.00 per cent of the farmers rarely made any queries in this regard.

6. **Permanency of the KCC scheme and contractual appointment**

The KCC scheme has not yet been declared as a permanent scheme by the Government, although the scheme is functioning very successfully since January, 2004. The policies of contractual appointment and low salary were considered to be the major drawbacks of the KCC system as perceived by the KCC staff. Therefore, there was always a tendency of job-hopping among the staff members. They used to leave the job immediately after getting an opportunity of regular absorption. Thus, it becomes difficult for the system to retain the experienced hands for long.

## Recommendation and Policy Implication

On the basis of findings of the study the following suggestions are offered, expecting that such measures, if taken in right perspective may improve the decision-making process and ultimately benefit the KCC users with higher productivity. The concerned Departments of the Central Government and the State Government can accordingly adopt appropriate policy measures for further necessary action.

1. **Improvement of infrastructural facilities**

The findings of the study revealed that inadequate space of the KCC activity room and outdated/un-useable tables and chairs were major shortcomings, and these are to be refurnished/replaced soon to create an ambience for better performance. Moreover, providing up-to-date and modern Hardware/machine (PC), Software programmes, Video Surveillance and Broadband/Wi-Fi have become essential for efficient discharge of the jobs by the KCC functionaries. Further, all the extension booklets, books and papers should be supplied by the office free of cost to the staff. The desired changes may not take place without strengthening of the infrastructural support services. (Attention: Ministry of Agriculture and Farmers' Welfare, Government of India).

2. **Requirement of Technical Training for the FTAs**

The FTAs are the principal agents who assure active participation of the KCC users/farmers at the grass root level. It is therefore essential to train them at regular interval to keep abreast of the changing situation. The training should be subject specific and also it should highlight the status of implementation of various Government schemes. Along with the classroom training, field visits are considered equally important for them. Publicity regarding the activities of the KCC among the farmers is highly desirable. (Attention: Directorate of Extension Education, Assam Agricultural University, Jorhat and IKSL.

3. **Strengthening Database for market, price and Government scheme related information**

The study revealed that there were some shortcomings with the KCC in providing the market information on supply, demand and price together with the benefits available under ongoing Government schemes. The farmers were not aware of the demand and price of their produce in different consuming areas. So, the State Government may arrange to disseminate market information on regular basis through websites and other media to make the farmers aware of different market situation and prevailing prices. The Government scheme related information should also be updated mandatorily for the benefits of all the stakeholders. (Attention: Information Wings of State Agriculture Department).

4. **Working hours of the KCC may be changed**

During the course of the study, it was noted that most irrelevant calls with abusive languages were received after 8.00 pm. At the same time, the farmers were found to engage themselves in their farms activities up to 8.00 am. That may be the reason why, limited numbers

of calls were registered in the KCC prior to 8 am. So, there is every scope of changing the timing of the KCC from 8.00 am to 8.00 pm. (Attention: Ministry of Agriculture and Farmers' Welfare, Government of India).

5. **Co-ordination among different line departments of the State Government**

Lack of co-ordination among the line Departments was considered to be a major problem for KCC functionaries, although the KCC is rendering yeoman's services to the farmers of Assam. As such, in the interest of the farming community; ensuring co-ordination among the different Departments of the State Government and also with the KCC is considered most essential. (Attention: Department of Agriculture and the allied sectors, Government of Assam).

6. **Kisan Call Centre may be declared as permanent scheme**

Kisan Call Centre, Guwahati is one of the most important call centres catering to the needs of the farmers of entire N.E. Region. It has been providing workable solutions to many of the pressing problems encountered by the farmers' instantly. No other departments can render the services so meaningfully and effectively. Considering the facts, KCCs may be declared as a permanent scheme of the Government of India under the Department of Agriculture and Farmers' Welfare. (Attention: Ministry of Agriculture and Farmers' Welfare, Government of India).

7. **The existing policies of contractual appointment may be removed**

The services of the KCC are available from 6.00 am to 10.00 pm *i.e.*16.00 hours a day, 7 (seven) days a week and 365 days a year. Considering the nature of job and dedication of the KCC personnels, the existing policy of contractual appointment in the KCC may be done away with and all admissible benefits may be extended to them as that of regular employees. (Attention: Ministry of Agriculture and Farmers' Welfare, Government of India).

## Conclusion

Kisan Call Centre was established in January 2004 at Guwahati, Assam covering entire North Eastern Region. The intention was to use all possible means of information and communication technology to respond to the farmers' queries and concerns in local languages. Considering the importance of the KCC, 30 (thirty) numbers of agricultural graduates and post graduates were employed at the call centre as FTAs, to supply the answers to the farmers' queries, and in case, they are unable to tackle the problem, they are at their liberty to refer the queries to the experts at the next higher levels.

Since inception, the KCC personnels are providing valuable suggestions/advices to the KCC users/farmers for upliftment of agriculture in the form of giving solutions to different problems on the spot. The findings of the study have clearly demonstrated that variety selection decisions, input purchase decisions, fertilizer/feed application decisions, weather/rainfall related decisions, crop management decisions, insect/pest control decisions, disease control decisions and weed control decisions constitute the major decision-making process, for which the sample farmers usually look forward to the KCCs. And over the years, the KCC is becoming more and more popular among the farmers' with lots of positive impact all around.

By and large, the KCC, Guwahati is serving a large chunk of farmers of the entire N.E. Region by providing them with the required information on improved agriculture, encompassing all technical, operational and economics issues. Inspite of a number of limitations inherent to the system, the KCC programme should continue to serve the farmers with ennobling policy support and generous funding from the Government.

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## Appendix- I

## Review of the Report

**(I) Title of the Draft Study Report Examined:**

**Decision-oriented Information System for Farmers: A Study of Kisan Call Centres (KCC), Kisan Knowledge Management System (KKMS), Farmers Portal and M-Kisan Portal in Assam.**
**By Dr. Anup Kumar Das and Dr. Ranjit Borah**

**(II) Date of Receipt of the Draft Report: October 21, 2017**

**(III) Date of Dispatch of Comments: October 31 2017**

**(IV) General Comments**

The government can play a crucial role in bridging the information gap of the farmers. Kisan Call Centre is a major initiative of the government in this direction. Agriculture possesses a prominent place in the economy of Assam and the farmers are the backbone of Assam Agriculture farmers are moving towards adopting new technology and ways for sustainable agriculture, and this require information and advice on latest innovations, and new techniques. With high mobile penetration and growth in ICT sector, transmitting information is becoming much easier. The present study attempts to evaluate the implementation of the KCC scheme in Assam.

**(V) Comments on Methodology and Analysis**

1. In the introduction, if some lines can be written about the call patterns in KCC. For example, which topics (Agriculture related) and crops constitute more calls? In which month the call frequency is higher? Which district is higher in calling?
   **Action:** Done as per suggestion.
2. In all the Tables, average rating is missing. Average rating helps in understanding an overall result. It would be highly recommended to calculate average rating for the tables.
   **Action:** Done as per suggestion.

A. **Centre:**

1. In Table 3.18 and 3.19, what is the reason behind less or no calls at level 2 or level 3?
   **Action:** Done as per suggestion.

**B. FTA:**

1. In Table 4.15, what is the reason behind less or no calls at level 2 or level 3?

   **Action:** Done as per suggestion.

2. In Table 4.8, 4.9 and 4.10, some variations are seen in each table. If column or bar graph could be added, it would help to compare the information in all the three tables.

   **Action:** Done as per suggestion.

3. Average rating is shown as zero in all the Tables. It would be good to show average rating. It gives an overall picture.

   **Action:** Done as per suggestion.

4. In Table 4.22, there is variation in the results shown in Table. Making a graph for the same would be very useful.

   **Action:** Done as per suggestion.

**C. Farmer:**

1. For Table 5.4, 5.5, 5.6, and 5.7, graphs can be added.

   **Action:** Done as per suggestion.

2. The impact of KCC on important farming decisions is one of the important part of the study. If the Table 5.14 can be condensed to few decisions it would show a clear picture of the impact. A new Table can be created which will show only those decisions which had an impact.

   **Action:** Done as per suggestion.

**(VI) Comment on other issues**

1. List of abbreviations used in the report can be added at the beginning of the report.
2. Table of Contents can be added in the beginning of the report
3. Executive Summary can be added in the beginning of the report.
4. For Tables where Liker scale is used, it would good to show the values of scale just below the Table. For example: Excellent=5, Good=4, Satisfactory=3, Somewhat poor=2, Very Poor=1. It would help the reader to understand the meaning of numbers mentioned in the tables.

   Typographical & other matters:

5. Page No. 2, 1st paragraph, replace “this” with “these”.
6. Page No. 2, Kisan Call Centre toll free number can be rewritten as 1800-180-1551.

7. Page No. 9, identifying instead of indetifying.
8. For Table No. 1.3, graph can be created. It will show a trend in total calls whether calls are increasing or decreasing. Also which districts have higher call traffic
9. Page No. 21, Kisan Call Centre toll free number can be rewritten as 1800-180-1551.
10. Page No. 21, last paragraph, 3rd line- Centre instead of cntre.
11. Page No. 53, 2nd last paragraph- foregoing instead of forgoing.

**Action: All suggestions have been accepted and incorporated in the report.**

**(VII) Overall view on the acceptability of report:**

The report has good insights & findings about the functioning of KCC in Assam and is found to be acceptable. If some of the above suggestions can be addressed/included, it could improve the quality of the report.

**Suggestion incorporated and submitted.**

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