CHAPTER - 5

FINDINGS, CONCLUSIONS AND SUGGESTIONS RELATING TO LIBRARIES AND USERS
FINDINGS, CONCLUSIONS AND SUGGESTIONS RELATING TO THE LIBRARIES AND USERS

The thesis outcome based on ICT enabled library services availability and usage for users in Agricultural domain is looked into. The findings from the research work and the conclusions based on them with certain suggestions were incorporated in this final chapter.

5.0 Findings and Conclusions

In this final chapter an attempt has been made to present findings, conclusions of the present research Study. Some suggestions are also made in this chapter on the basis of these findings and conclusions.

5.1 Findings, Conclusions and Suggestions relating to Libraries

In this study we looked at various automated and traditional library services and infrastructure facilities are looked into which include ICT based services.

5.1.1 Automation

Automation helps information storage and retrieval in a speedy way. The present study has found that 62.5% libraries are automated while the remaining 37.5% libraries are not automated. It can be concluded that a majority of the libraries under study have the facility of automation, and are providing automated library services such as cataloguing, circulation. In other words automated libraries provide computer-based services to the users (see Table-2).

5.1.2 Software

Now a day s varieties of library software packages are available for libraries. A majority of the libraries are taken for the study i.e., 50% is using LIBSYS software and 12.5% libraries are using e-Granthalaya software. On the whole, the 37.5% libraries,
which have not automation in their libraries, are not using any software in their libraries. This indicates these libraries are not offering computerized library services (see Table-3).

5.1.3 In-house automated activities

67.5% libraries are providing integrated library in-house activities such as acquisition, cataloguing, and serial control, OPAC etc. So it can be concluded that a majority libraries are providing in-house activities by using library software. The remaining libraries are not having any in house automated services as they have not any software and automation facilities (see Table-4).

5.1.4 Infrastructure Facilities

For providing ICT based services to the users, libraries require infrastructure facilities such as Internet, computers, printers, scanners, servers, LAN, WAN etc. In the study it was found that desktops and printers are available in almost all the libraries along with Internet. 75.0% libraries have LAN facility and 50% libraries have servers, while 62.5% libraries have UPS facility. But it was found that a majority libraries i.e. 75% does not have digitization equipment / software, videoconference facility is available only in 25% of the libraries. So it can be concluded that all the libraries have computers and printers and Internet only. Infrastructure facilities such as LAN, servers, digitization equipment, and CD-Servers, videoconference are not available in majority libraries taken for study. Thus it indicates that proper infrastructure facilities are not available in all the libraries taken for the study to provide ICT based services (see Table-5).

5.1.5 ICT Software

Software such as digitization software, digital library software, e-book reader software, etc are essential for providing modern ICT services such as digital libraries and IRs. But 87.5% libraries taken for the study have not digitization and digital software and 75% libraries do not have e-book reader software. Thus it can be concluded that majority libraries are not having modern ICT based software (see Table-6).
5.1.6 Service providers and type of connectivity

Internet facility can be provided via different modes such as broadband, dialup, Wi-Fi etc. It was found that 62.5% libraries are using broadband connection and 12.5% libraries are using leased line and one library is providing Wi-Fi connection along with broadband. It was found that majority libraries taken for the study have service providers and broadband connection or leased lines. It is also found that Internet connects all the libraries (see Table-7 & Table-8).

5.1.7 ICT enabled Conventional Services

ICT enables conventional library services such as OPAC, DDS, UC, and Bibliographical online / offline services, reference services like (chat rooms, ask librarian) and CAS (mobile technology, e-news bulletin) are playing a vital role in dissemination of information. It was found that except bibliographical services (offline / online) and OPAC. All other services like CAS, Reference services, DDS, UCS and user education are not available in the majority of libraries (see Table-9).

This implies that conventional services are important for dissemination of information but in the libraries taken for the study except bibliographical databases and OPAC all other services are not provided.

5.1.8 ICT enabled New Services

As information technology fledged, a variety of Internet / web based services and these are available to the users. These include online e-journals, WebOpac, e-books, Electronic Theses and Dissertations (ETDs), Patents, Subject Gateways, Digital Libraries, Institutional Repositories and courseware etc.

It was found that majority libraries i.e. 75% are providing online e-journals and access to web based services. Only 12.5% libraries are providing WebOpac, and subject gateways and institutional repositories services. E-books, ETDs, Patents, Digital Libraries, and courseware services are playing major role in dissemination of information but the libraries under study are not providing these services. It can therefore be
concluded that a majority of the libraries under study are not a providing majority ICT enabled new services except e-journals.

It was found that except e-journals, bibliographic databases the rest of modern and conventional ICT based services are not available in the libraries taken for study (see Table-10).

5.1.9 Subscription /provision of Agricultural Databases

There are major international databases like AGRIS, AGRICOLA, and CABI which provide vast amount of information on agriculture. CeRA, Indian Harvest and PROWESS are available at the national level in the field of agriculture.

It was found that AGRIS is being subscribed online only by 25% of libraries, and via offline by 50% libraries. CABI is not available on online in all the libraries but 37.5% libraries are subscribing by offline. AGRICOLA is available on online at 37.5% libraries and off line at 25% libraries. CeRA and ScienceDirect are available on online in a majority of the libraries i.e., 87.5% libraries and 62.5% libraries respectively. EBSCO is available on online at 50% libraries. But it was found that all the libraries taken for study are not subscribing to the online databases of international importance such as CABI, AGRICOLA, and AGRIS on agriculture. Only CeRA is available on online in a majority of libraries under study (see Table-11).

5.1.10 Database Suppliers

SilverPlatter Information Inc. is well known to librarians and information professionals for its electronic databases. Silver Platter provides electronic access to quality bibliographic and full-text databases using innovative technology via local, network and Internet access. It works collaboratively with publishers and data owners, library system vendors, and distributors worldwide to make available the widest range of quality databases and greatest choice of access. With these partners, Silver Platter shares its ERL (Electronic Reference Library) Technology, so that it can be used as a common technological framework on which digital libraries can be created and interconnected to form a Worldwide Library (see Table-12).
It was found that 50% libraries taken for study are subscribing databases through the vendor i.e., the database supplier, Silver Platter.

5.1.11 Agricultural Networks

These are formal association among libraries, documentation centers, archives created with the main aim of coordinating their efforts and share resources.

This helps exchange of information among the networked members and it helps in sharing of information and resources. There are a large number of Agricultural Information Networks available on agriculture in the world. ARISNET and DACNET networks are being provided by 50% of the libraries. AGLINET and AGNIC are the international networks provided only by 37.5% libraries. While 25% libraries provide CGIAR networks.

Majority libraries taken for the study are not providing networks facility to the users. Only few libraries are providing networks facility, as it would help to access worldwide information on agriculture at their desktops (see Table-13).

5.1.12 Agricultural Websites

Websites provide valuable information through net. Websites contain web pages and provide web 2.0 technology. These websites provide a variety of searches, linkages, current information and events. 87.5% of the libraries under study browse the www.fao.org for day-to-day work followed by AGRISNET and Kisan.net with 62.5% of the libraries, AGNIC and CGIAR by 50% libraries. So it can be concluded that the librarians in their day-to-day work are also browsing AGNIC, CGIAR, and krishiworld.com after FAO and AGRISNET.

The libraries may browse the other websites depending on the information need. There is a need to browse the entire national and international websites to provide required information to the users of the libraries in day to work. Only a few libraries are browsing web sites to provide recent and nascent information. Libraries should browse
all major web sites on agriculture then alone they would provide up to date information to the users (see Table-14).

5.1.13 Search Engines

Search engines help to locate the sources. Several agricultural search engines are available on agriculture. The libraries must provide the important search engines via library website to cater to the information needs of the user. A majority of 75% libraries under study are not providing agricultural search engine facility in their libraries. Therefore it can be concluded that libraries must provide search engine facility to access a wide variety of information on agriculture (see Table-15).

5.1.14 Requirement of Training on ICT

To provide ICT enabled services require knowledge / training on hardware maintenance, network administration, website maintenance, digital information management, development and management of databases.

It was found that the staff of 75% libraries required training on development and management of Bibliographical databases, hardware maintenance, network administration, and Knowledge management where as 87.5% libraries need training on digital content management and metadata management. Training on computer programming and website/ portal development required by all the libraries.

It was found in the study that the staff in a majority of the libraries needs training on hardware maintenance, creation and management of digital libraries, network administration and development of web based / online products and knowledge management. So it can be concluded that the staff of the library are weak in the above aspects. They said that they need sophisticated training on the topics. Well-trained staff can provide the services in a better way to their clientele. Therefore it can be conclude that training is required for the library personnel to provide ICT based services to their clientele (see Table-16 & Table-17).
5.1.15 Barriers to provide ICT enabled services

To provide ICT based services effectively and efficiently there must be problem free environment, which facilitates dissemination of information without errors. The general problems of the ICT are inadequate hardware and software, lack of qualified and skilled staff, reluctance of staff in handling ICT, lack of commitment by top management, and lack of budget.

It was found that 75% libraries are faced with the problem of inadequate ICT hardware and Software. Besides 100% libraries said that lack of budget is a problem in providing ICT based services. Lack of skilled and qualified is another problem as reported by 50% libraries and 50% libraries said that the reluctance of staff in handling ICT services is a problem. 37.5% libraries said low-level skills of users in using ICT is also a problem. 62.5% libraries said that the top management is not committed to provide ICT based services and this is a problem (Table-18).

5.1.16 Consortia

Majority libraries i.e. 75% are members of consortia and thus they are reducing cost and avoiding duplication. These libraries are members in the consortia CeRA maintained by ICAR. All the libraries taken for study are not members in the any consortia such as UGC-INFONET, and INDEST (see Table-19).

5.2 Findings, Conclusions and Suggestions relating to Users

Agriculture is a separate discipline among other disciplines. A lot of research and extension activities are going on agriculture. Various organizations and institutions have been producing information from their research. The large amount of information is being produced in agricultural sciences in the form of databases e journals, networks, consortia, websites, and search engines. Various aspects about ICT based agricultural information systems/services/products have been studied in the present research and it yielded out very useful data. Based on the analysis of the data about users the following findings are presented and conclusions are drawn
5.2.1 Library Automation

Automation is important to provide computer based information storage and retrieval services, automation also help libraries in house activities such as, cataloguing, circulation etc. The present study found that 73% users said that their libraries are automated. Only 27% said that their libraries are not automated. Therefore it can be concluded that a majority of the libraries are using library software for their automation activities and three libraries taken for the study are not providing automated services and these libraries are not using any library software (see Table-23).

5.2.2 Awareness on Conventional ICT Services

ICT enabled conventional services help the user in locating, finding and accessing information. The awareness of users on the ICT based conventional services indicates their knowledge about the service, and in turn it indicates service popularity and usage. Awareness means to know and it can be attributed to hearing, usage, learning, seeing, observing experiencing of knowledge about the service.

The present study has found that 82% of the users have awareness about bibliographical services; followed by and 65.1% CDS/DVDs, 64.0% users who have awareness about OPAC. The other ICT based services like CAS, Reference services, Document Delivery service, Inter Library Loan, Union catalogue, are not known to most of the users Only a small portion in the sample are aware about these services. But these services play a vital role in the dissemination of information like provision of current information, searching of catalogues of many libraries, loan facility from other libraries, and Document delivery. These services also provided by ICT are not familiar to a majority of the users.

Thus it can be concluded that the users are only aware about OPAC, Bibliographical services along with audio video services. The libraries are providing OPAC, A-V, and Bibliographical services and consequently the majority of users have awareness of these services. As the majority libraries do not provide the remaining services and the users did not know about these services (see Table-24).
5.2.3 Awareness on New ICT services

New ICT services provide a vast amount of information via Internet and other networks to users on their desktops. WebOPAC, E-journals, E-books, Subject gateways, ETDs, Digital Libraries, Institutional Repositories, Patents and Course ware come under New ICT based services. From the study it was found that only 72.6% users are aware about e-journals and 39.2% users are aware about e-books.

As an average 15% users are aware about the services such as Digital Libraries, Institutional Repositories, Subject gateways and WebOPAC. The above-mentioned New ICT based services are not known to a majority of the users (i.e. 85%). They are unaware about the new ICT based services. That the new ICT services such as e-journals are known to a majority user indicates that they might have used and observed or had knowledge about the e-journal, as a large number of publishers are producing E-journals by online. These e-journals are available via consortia also. The rest of the New ICT based services such as Digital Libraries, Institutional Repositories, Subject gateways, WebOPAC are playing a major role in information dissemination over networked environment and to remote users and these services are available to users on 24/7 time basis. But majority users are not aware about these services (see Table-29).

5.2.4 ICT based Reference service

ICT based reference services like FAQ, Ask Librarian, Chat rooms help in the location of sources and exchange and help in finding of information. It was found that the users said ICT based reference services such as FAQ, Chat room, Virtual center, expert systems are not provided by the libraries under study. Only 47% users said the libraries provide only e-mail facility to the users. Therefore it can be conclude that ICT based reference services are not being provided by the majority of the sample libraries said by the users (see Table-34).
5.2.5 ICT based CAS services

ICT based CAS services like e-newsletter, weblogs and discussion forums etc are helpful to know the recent trends and developments in the field and they help in exchange of information within no time to the users. It was found that the ICT based current awareness service like List serve, weblogs, Discussion forums web portals, etc are not provided by the libraries said by the users from all the libraries. Therefore it can be concluded that all the libraries taken for study are not providing ICT based CAS services (see Table-35).

5.2.6 Usage of ICT based services

ICT services are available in the libraries. 71% Users use ICT based services. It can be stated that a majority of the users are using ICT based services such as Bibliographical services, and online journals and the remaining 29% users are not using ICT based services. Therefore it can be conclude that majority users are using ICT based services on par with technology. Only 29% users are not using them. This indicates that they are not interested in using ICT (see Table-36).

5.2.7 Purpose of Usage of Information

Generally users need information for different purposes. In this study it was found that 68.2% need information to up to date their knowledge and 67.7% need information for academic purpose and 39.2% users also use information for research work and 41% of them use information for attending seminars, workshops etc. Thus users need information for different purposes. It implies that users need information to strengthen their academics, research and knowledge and they need information continuously, and consequently majorities are particular about information to update their knowledge (see Table-37).

5.2.8 Searching / Seeking Information

Users seek information from documentary and non- documentary sources. Documentary sources are printed materials and non-documentary are colleagues, teachers, librarians etc. Due ICT, Internet is a source to seek information. It was found
that 70.6% are using Internet to seek / locate information; while 57.3% seek information by discussion with friends, colleagues followed 53.2% who asks the librarians for information.

It may be pointed out that majority users are seeking information from different sources and thus implies that they are serious about the information they seek from a variety sources. It can be observed that among all sources, Internet is the main source for seeking information, Internet is big repository for information and millions, billions of web pages are provided by a variety of browsers and search engines. Thus usage of Internet by users in turn shows that they are using ICT tool i.e. Internet, to locate/seek the information. It was noted that even in ICT era users are also contacting friends, librarians for information (see Table-38).

5.2.9 Awareness on Agricultural Databases

A large number of agricultural databases are available in the field agriculture to disseminate information to the users. These are produced by different publishers, agencies and are available to users on offline and online mode in the libraries. A majority of users i.e. 81.1% have awareness about AGRIS Database produced by FAO followed 75.2% users of CABI and AGRICOLA by 71.2% users. All these are international databases.

69.7% users know about CeRA a national database produced by ICAR. They also aware about other databases such as, EBSCO, Science direct, Agriculture & Biological abstracts. So it can be concluded that the users are aware about major national and international reputed databases such as AGRIS, CABI, AGRICOLA, ScienceDirect, CeRA, and EBSCO (see Table-39).

5.2.10 Most useful databases

Agricultural databases such as AGRIS, CeRA, CABI, AGRICOLA, and SCIENCEDIRECT are most useful to the users in general. As AGRIS is a large and reputed database of FAO a major and unique organization in the world on agriculture. This Database is a cooperative system for collecting and disseminating information on
the world's agricultural literature in which over 100 national and multinational centers are members AGRIS who provide agricultural information from around the world. Much of this information includes government documents, technical reports and non-conventional literature that have their source in both developed and developing countries and that can be found nowhere else. The database is available through DIALOG who has a lease agreement.

CeRA it has been established in 123 agricultural / animal science universities / deemed universities / research institutes of the Indian Council of Agriculture, It is a service of ICAR for providing electronic information on agricultural research, education and extension. Journals and Annual Reviews can be retrieved through the address http://www.cera.jccc.in. Most of the agriculture related journals from selected publishers are available in CeRA. At present, more than 3000 journals are accessible. A Consortium for e-Resources in Agriculture (CeRA) with its headquarters is located at the Indian Agricultural Research Institute, New Delhi.

It was found from the study AGRIS is being used by 67.8% users followed by CeRA 64.8%. Because of the above features these databases are most useful to the users (see Table-44).

5.2.11 Popularity of agricultural databases

Of the users taken for the study 61.0% opined that AGRIS is a more popular database followed by AGRICOLA and CABI with 55.2% and 52.3 % users respectively. All the three are international databases, which cover wide and variety information and provide current, nascent qualitative and quantitative information to the users. It was found that for 52.3 % users CeRA is a more popular database, as it is a national database. It can be concluded that AGRIS, AGRICOLA CABI, and CeRA are more popular databases according to sample users (see Table-49).
5.2.12 Reasons for the popularity

There are various reasons for the popularity of databases. AGRIS was more popular due to the provision of up to date information as stated by 31.9% users and CABI got more popularity due to its coverage of wide range of information as it reported by 61.5% users. AGRICOLA got more popularity due to the provision of full text articles according to 66% users CABI got popularity due to availability of abstracts as felt by 62.2%.

So it can be concluded that provision of up to date information, coverage of wide range of subjects, availability of full text and abstracts are reasons for popularity of AGRIS, CABI, and AGRICOLA agricultural databases (see Table-54).

5.2.13 User awareness on agricultural websites

There are a large number of agricultural websites available on Internet. These websites contain millions of web pages. There are famous websites providing a vast amount agricultural information and users access this information for their information needs.

It was found that 75.5% users are aware about the FAO website followed by AGNIC website with 65.4% users while 62.5% users are aware about AGRISNET and www.agriwatch.com is familiar to 61.1%. These two websites are national websites. CGIAR is familiar to 55.2% users. The other website krishiworld is also known to users.

FAO as it is international reputed website and this website is being maintained by FAO, it covers global information on agriculture. Next website is AGNIC one can search the world of agriculture or stay up-to-date with the latest agricultural news and events taking place around the world is www.agriwatch.com and it is national web site by IASL. It provides the Agricultural Input and Output side, poor quality of information and analysis about Demand, Supply, Prices, and Market Trends for various agri-commodities.

AGRISNET is a Mission Mode Project (MMP) under National e-Governance Plan (NeGP) of Government of India, Department of Agriculture & Co-operation, and Ministry of Agriculture. This portal shall provide relevant information and services to the
farming community and private sector through the use of information and communication technologies. The portal provides the end users with the ability to access services through an online platform at their doorstep. Thus above features made users aware about these websites. Hence it can be concluded that users are aware about major websites at the national and international levels (see Table-55).

5.2.14 Most useful websites

Websites provide latest/current information about the firm news, events and web 2.0 technologies. It was found that 74% users said FAO website is the most useful to them, followed by AGNIC for 62.5% users. AGRISNET is also the most useful website for 61.0% users and CGIAR for 52.3% users.

FAO links the field to national, regional and global initiatives in a mutually reinforcing cycle. They range from local projects to global programmes. FAO web site serves as a knowledge network. It uses experts - to collect, analyze and disseminate data that aid development. A million of users visit the FAO Internet site to consult a technical document or read about their work with farmers. It also publishes hundreds of newsletters, reports and books, distribute several magazines, and create numerous CD-ROMS and host of dozens of electronic fora. An intergovernmental organization, FAO has 191 member nations, two associate members and one member organization, the European Union.

The Agriculture Network Information Center (AgNIC) is a voluntary alliance of members based on the concept of “centers of excellence”. The member institutions are dedicated to enhancing collective information and services among the members and their partners for all those seeking agricultural information over the Internet. More than 80 information and subject specialists. Over 60 topics covered comprehensively full-text and web-based resources.

Participation from five countries with collaborative contributions from many more committed to the identification, delivery and preservation of reliable, freely
available, evaluated, digital content and quality services for agriculture, food, and natural resources information.

The CGIAR now has 64 governmental and nongovernmental members and supports 14 research centers and one intergovernmental research center. This web site covers news on research, media, consortia events, resources etc on the above topics. For the above features these websites are most useful websites. Therefore it can be concluded that major websites like FAO, AGNIC, AGRISNET, and CGIAR are most useful websites to the users as these provide a vast amount of information (see Table-60).

5.2.15 Popularity of the websites

56.6% of users said www.fao.org is a more popular website. 42.4% users said AGNIC is a popular website. 40.6% users said AGRISNET and AGRWATCH.COM are more popular websites, as these are national level web sites. FAO website more is more popular as it is being produced and maintained by FAO a major international organization that covers huge amount information on agriculture. AGNIC is being maintained and produced by NAL of USA and it covers a large amount of information on agriculture. Therefore it was found that FAO, AGNIC, AGRISNET, AGRIWATCH.COM are more popular websites among the users taken for the study (see Table-65).

5.2.16 Reasons for popularity

67.3% users said FAO got popularity, as it covers a wide range of information. 36.3% said FAO provides up to date information. 48.7% users said FAO got popularity as it has linkages with other sources and 35.8% users said it is user friendly website.

48.2% users said AGNIC got popularity due to its wide coverage of information, 35.6% users said AGNIC provides up to date information, 42.6% said it provides linkages to other sources. 31.5% said it is user friendly. So it can be concluded that FAO, AGNIC websites are more popular due to up to date, wide coverage of information, accessibility and linkages and user friendliness. CGIAR at the international level an
AGRISNET and AGRIWATCH.COM at the national level are also popular due to these four reasons (see Table-70).

5.2.17 Awareness on Agricultural Information Networks

Networks contribute to the sharing / exchange of information between organizations. Networks provide information to users in particular subject or geographic region. There are a variety of networks available on agriculture and these are for sharing information among the originations. It was found that 61% users are aware about the DACNET network followed by AGNIC (55.2%) and CGIAR (55.2%) of users respectively. AGLINET was known to 52.4% users and ARISNET to 52.3% of the users.

The Agriculture Network Information Center (AgNIC) is a voluntary alliance of members based on the concept of “centers of excellence”. The member institutions are dedicated to enhancing collective information and services among their members and their partners for all those seeking agricultural information over the Internet.

DACNET is a product of India’s Department of agriculture and co-operation for developing information technology in the Directorates and their field units on agriculture in the country. Both the above networks cover wide range of information on agriculture and are produced by reputed organizations. It can be said that the major networks at national level and international level DACNET AGNIC, CGIAR, are familiar to a majority users taken for the study. Average 40.0% users are not aware about the networks on agriculture. So it can be concluded a considerable chunk of the sample users not aware about networks of national international levels (see Table-71).

5.2.18 Most useful Agricultural Networks

Networks provide a vast amount of information, with accessibility to other linkages. They useful in providing information to their members. 59.5% users said DACNET network is most useful to them followed by AGNIC with 53.0% and CGIAR with 49.4% AGLINET with 47.9% and ARISNET with 45.9% of the sample users. DACNET is supported by NIC; it covers the subjects such as soil, land, weather, pests’ agricultural marketing. It facilitates India’s agriculture online; it disseminates
information, and exchange information and share information among government departments.

AGNIC covers more than 80 information and subject specialists. Over 60 topics are covered in it comprehensively. It also provides full-text and web-based resources and five countries are participating in this network. AgNIC facilitates and participates in partnerships and cooperation among institutions and organizations. For these reasons, it is most useful website to users.

AGLINET is a voluntary network of agricultural libraries around the world with strong regional/country coverage and other comprehensive or very specialized subject resource collections. AGLINET centers provide partner libraries with access to the literature originating in the country or region or for a given specialization. This voluntary co-operative library network was founded in 1971 within the framework of the International Association of Agriculture Librarians and Documentalists (IAALD). AGLINET libraries achieve comprehensive resource coverage and mutual and rational use of library resources, not only for the benefit of members' own constituencies, but also in support of other libraries within their country/region.

CGIAR research is dedicated to reducing rural poverty, increasing food security, improving human health and nutrition, and ensuring more sustainable management of natural resources. It is carried out by 15 centers, that are members of the CGIAR Consortium, in close collaboration with hundreds of partner organizations, including national and regional research institutes, civil society organizations, academia, and the private sector. The 15 Research Centers generate and disseminate knowledge, technologies, and policies for agricultural development through the CGIAR Research Programs with 8,000 scientists and staff, unparalleled research infrastructure and dynamic networks across the globe. It has comprehensive collections on agriculture.

Because of the above features these networks are most useful to the users. From the study it was found that DACNET AGNIC, CGIAR, AGLINET are the most useful networks at International level (see Table-76).
5.2.19 Agricultural Networks popularity

38.1% users said DACNET is a more popular network, while 36.3.0% users said AGLINET of FAO is a more popular network followed by 35.6 % users who said AGNIC network is more popular. Next 34.8 0% users said CGIAR network more popular. It can be concluded therefore that most useful networks are DACNET, AGLINET, AGNIC, and CGIAR among users in the sample (see Table-81).

5.2.20 Reasons for popularity

Popularity of the net works depends on wide coverage, up to date information and its accessibility with other linkages. 26.2% users said AGLINET is popular as it provides up to date information followed by 24.2% users who said DACNET. CGIAR also got popularity due to provision of up to date information.

AGNIC got popularity due to wide coverage of information according to 37.9% users, DACNET got popular due to wide coverage of information as reported by 36.5% users. 29.9% users said CGIAR got popularity as it provides linkages with other sources followed by DACNET (28.8%).

Thus it can be concluded that the major networks which are more popular and most useful to the users due to the provision of up to date information, wide coverage and linkages with other sources of information. The users have given popularity to major international networks, as these networks are most useful to them (see Table-86).

5.2.21 Frequency of accessing

ICT based services would be available to the users on 24/7 basis. Users can access these sources at any time from any place depending on availability. 37% user’s access e-journals regularly, 23% users once in a week, 12% once in fortnight and 28% never access e-journals. 34% users access online databases regularly, 23.8% once in a week and 15.4% once in two weeks and 26.7% never access databases. 40% users access websites regularly and 23% once in week. 12% once in two weeks and 25% never use websites.
22% users access networks regularly and 20% once in a week, 23% once in two weeks, 35% never access networks.

Therefore it can be concluded that e-journals, online databases and websites are accessed regularly, and on average 26% users never access these sources and 35% networks. This indicates that one fourth of the samples are not using ICT based products at all (see Table-87).

**5.2.22 Insufficient e-journals and online databases**

In this respect 41.8% users said that there are insufficient e-journals available in their library, 39.8% said that sufficient e-journals are available in the library. But 18.3% said they are not aware about any e-Journals.

Likewise 44% users’ online databases available in their library are insufficient, while. 43% said the libraries are providing sufficient online databases. But, 13% said they are not aware about any online databases. Therefore it can be concluded that an average of 43% users said that there are insufficient online journals and databases available in their libraries (see Table-88).

**5.2.23 Satisfaction of use of ICT based services**

Satisfaction of the users depends on provision of needed information at the right time without wasting their time. ICT based services help the user in getting qualitative and quantitative information. Only 25% users said they are fully satisfied with the ICT based services available in the library. While 40.1% are partially satisfied with the ICT based services in the libraries and 11.9% were uncertain and 23.2% were not satisfied.

It can be concluded that 40.1% users are partially satisfied which means only services which are provided to them are not up to the mark and 23.1% said they are not at all satisfied with ICT based services a fact which indicates that libraries are not providing proper ICT based services and therefore the users are not satisfied. It can be interpreted that only 25% are satisfied only with the services. The remaining samples of users taken study are not satisfied. Thus it can be concluded that a majority users are not satisfied with the services provided by the libraries (see Table-89).
5.2.24 Problems in using ICT

To access the ICT based products / services. Problems like infrastructure, availability of sufficient sources, lack of knowledge about ICT / capture etc, prevail. It was found in the study that 40.1% users said speed of Internet and server is a problem to access ICT based services. 34.2% users said that lack of awareness about ICT products / services are a problem. Lack of orientation about using ICT and lack of computer knowledge is another problem as pointed out by 25% users. 43.6% users pointed out that lack of availability of needed information is a problem and 21.8% said shortage of computers is a problem followed by lack of support from library staff is another problem for 25% of users. Therefore it can be conclude that the users in using face the above problems / accessing ICT based services (see Table-90).

5.2.25 Need for Training on ICT

In relation to training 60% users said that they need training to use the ICT based products and services effectively and efficiently and the remaining 40% of users said that they do not require any training/orientation. Hence it can be concluded that training is a must for a majority of the users to access ICT based products. Computer knowledge is essential for usage of ICT based products and services. To get this knowledge users need training on computers and Internet. From training they can use computers freely and browse the Internet effectively. In this context 60% users said they need training to use ICT based products effectively and efficiently (see Table-91).

5.2.26 Comprehensive ICT based system

74.4% users said that there must be a comprehensive agricultural information system at the national level to receive and dissemination information to the users. It can be concluded that a majority users expressed their preferences for such a system because it can be save their time in searching and accessing information. They felt that at one window large pool of agricultural information might be searched and accessed so only then they can able to utilize information without wasting their time (see Table-92).
5.3 Testing of Hypothesis of the study

**Hypothesis-1:** Agricultural Information Systems / agricultural libraries at Hyderabad are well equipped and providing ICT based new and conventional services and products such as databases, networks and websites to the users with good infrastructure facilities.

As per table-2 to table-8 proved as that only few Agricultural Libraries in Hyderabad are well equipped with better infrastructure facilities and network systems. Hence, the hypothesis-1 is negative.

**Hypothesis-2:** Majority of the users has awareness about ICT based Agricultural Information services and products, which are useful to them.

As per the data and analysis from Tables-24, 29, 34, 35, 39, 55 and 71 are proved, as that majority user are aware of ICT based agricultural information products and services such as agricultural databases, networks, websites. Hence, the hypothesis-2 is proved and valid.

**Hypothesis-3:** A majority of agriculture libraries are subscribing sufficient on-line databases and e-journals to users.

As per the data in Table-88 the online databases and e-journals subscribing by the libraries are insufficient to the users. Hence, the hypothesis-3 is negated and became null hypotheses.

**Hypothesis-4:** Users and libraries are facing problems in accessing/handling ICT based services and they need proper training.

As per the data and analysis in Table-90 shows that majority users having problems in using ICT based services. Hence, the hypothesis 4 is proved and valid.
5.4 Suggestions & Recommendations

The libraries under survey may adopt need based ICT services in accordance with the technological developments and make the users aware about these services.

- The orientation or training on usage of ICT based products to the users is essential. The library staff also needs to be trained on ICT for the better management of the libraries. Allocation of the budget play a proactive role in making the libraries fully ICT based ones.

- The ICT enabled conventional services such as document delivery service, union catalogue, reference services (chartroom, ask librarian etc), Current awareness service (e-mail, mobile technology, e-news bulletin, weblogs etc.) may be provided to the users by the libraries because its play a major role in information dissemination. Along with technology fledging, the libraries also should think about the introduction of New ICT based services to libraries in agricultural field.

- The libraries should put up the list of major national and international websites and provide links with these websites through their home page which would help the user in not only getting a pool of web sites at one place it also saves the time of the user.

- Libraries try to procure audio-visual products, multimedia products CD, VCD’S, DVD’S and these products kept on CD server to provide access to remote user by providing appropriate softwares like quick time players, Microsoft media player etc. as audio–visuals are important in agriculture. The libraries taken for the study must co-ordinate with INFLIBNET, DELNET and other International Organizations to access union catalogues online.
5.5 Chapter Summary

The major outcome of this study suggests that a consortium of all eight libraries can form as a unified Library Information System in Agriculture for all users of eight institutions. This can be achieved only through ICT enabled services to share all types of resources, products, e-books/e-journals and other information sources. By which shared resources can reduce investments and increases the learning of users through shared knowledge domains. As a scope of the study, the available national institutes in Hyderabad are considered, but all put together not able to form a full Agriculture domain subject area. To make a consortium the future research can see with all components of Agriculture national institutes libraries are to be considered to see the better outcome.