Chapter-1

Introduction
1.0 INTRODUCTION

The process of planned economic development in India began with the launch of the First Five Year Plan in April 1951. At that time, the country faced severe food shortage and was confronted by mounting inflation. The Plan accorded pride of place to programmes meant for agriculture and community development. This was a natural priority for the Plan which sought to raise the standard of living in rural areas and overcome food shortages. Successive Five Year Plans have aimed at improving irrigation facilities, encouraging the use of fertilizers, improved varieties of seeds, implements, machinery and institutional credit. As a result, there has been a significant increase in the use of modern inputs leading to higher productivity and production. Considerable amount of progress has been made not only in the production of major foodgrains, but also in horticultural crops. The agricultural sector occupies a key position in the Indian economy. Approximately a quarter of India’s national income originates from this sector.

In the mid-sixties India depended upon the international markets for food grain supply, with millions of its people going hungry, but from then on, there has been no looking back. The Indian Council of Agricultural Research (ICAR) was reorganized with the object of enabling it to play a more effective role. The dwarf wheat created, started a revolutionary process of higher produce. High-yielding varieties of rice and hybrid maize, jowar and bajra were released. All-India coordinated projects were started. Agronomic experiments on farmers’ fields became a gigantic national operation. The new varieties were supported by the latest agricultural practices. The compete involvement of the centre and state governments and, the infrastructure, systematically built after 1947, paved the way for an increased agricultural production, and then subsequently led to the Green Revolution, which brought about a tremendous rise in foodgrain production, from 54.921 million tones to 210.44 million tones (India, 2007).
The massive increase in agricultural production notwithstanding, some problems remained, and still remains to be tackled. The Green Revolution did not cover all the crops. The main spurt in production was in the case of wheat, though there had been increase in the case of a few other cereals also. However, in the case of pulse crops and oilseeds the progress has been insufficient and a great deal will have to be done to step up their production too. These two major groups of crops can, in no case, be ignored. Pulses contain a higher proportion of protein than cereals and, in a country where the people are largely vegetarian, these crops occupy a very important place. It may be added here that due to insufficient production of oil-seeds, large quantities of edible oils have still to be imported.

Again, by and large, the yield, per hectare, of most of the crops is still quite low as compared to that in agriculturally advanced countries. There is an urgent need to take measures based on research, to stabilize the annual agricultural production which is subject to considerable fluctuations, either because of weather conditions or because of damages caused by pests and plant-diseases. Likewise, there are many problems to be tackled with respect to animal husbandry and veterinary science; as also in the vast and important area of fishery.

Besides the above, another aspect which adds to the problem is that there has been a steady growth in population. It is estimated that India’s population is 1027 million (531.3 million males and, 495.7 million females) as of March 2001. There are about 103 million farming families spread over 127 agro-climatic zones of the country with a variety of crop and animal production systems (Jain and Goria, 2006). Till recently, about one tone of foodgrains per six persons per year was being sourced, whereas it should have been for four persons. This, in turn, means that the per capita consumption of foodgrains in India is not at all satisfactory.

It is an established fact that the land available for cultivation is limited, and will continue to decrease further, on account of the ever-growing demands of industries, roads, houses, etc. In India, for instance, broad cropping patterns indicate that though foodgrains have
preponderance in gross cropped areas as compared to non-foodgrains, their relative share came down from 76.7 percent in 1950-51, to 65.6 percent during 2003-04 (India, 2007). The total cropped area has also been fluctuating from year to year.

It is clear from the above that unless continuous improvement is brought upon the present level of crop production, India may once again face food storage. Since the area under cultivation can not be increased and steady growth of population can not be checked, the only alternative left is to make qualitative improvement in farming, which, in turn, requires improved agricultural production technology. For this, an efficient research and development programme is needed. It is now recognized that the effectiveness of any research and development programme depends upon the quality and quantum of work done by its scientists, who, in turn, have to be effectively assisted by technical, administrative and supporting agencies. One of such agencies, and an important one, is the agricultural university or institutional library, which plays a pivotal role in information communication and also, in keeping the scientists posted with the latest knowledge and advancement in their respective fields of specialization.

1.1 NEED AND SIGNIFICANCE OF THE STUDY

After independence, the agricultural scenario has changed considerably due to socio-economic, technological, industrial and political developments in the country. Now, agriculture is considered as the backbone, and the main source of India’s economy, supporting directly and indirectly, 70% of the population of India (India, 2007). Since independence, India has witnessed significant increase in the production of foodgrains (green revolution), oil seeds (yellow revolution), milk (white revolution), and fruits and vegetables (golden revolution). All this became possible owing to the application of cutting edge science and technology along with positive policy support, and hard work of Indian farmers. The Indian Council of Agricultural Research (ICAR), an apex organization National Agricultural Research System (NARS), for conducting and coordinating agricultural research, has been at the forefront of these
agricultural revolutions in the country, making India not only self-sufficient, but also with surplus in food. As a forward looking organization, fully realizing the emerging complex challenges, ICAR has set upon to attain the ‘Rainbow Revolution’ covering the entire spectrum of activities in agriculture which will make India a developed nation, free from poverty, hunger, malnutrition, and environmental safety. To achieve this goal, it is operating two prestigious mega projects, viz. National Agricultural Technology Project, which lays emphasis on production system research, organization and management reforms as well as innovations in technology dissemination, and the Agricultural Human Resources Development Project which emphasizes on improving the quality of agricultural education.

Constitutionally agriculture is a State subject in India. The Ministry of Agriculture, Government of India, through its Department of Agriculture and Cooperation (DAC), Department of Agricultural Research & Education (DARE) coordinates agricultural research and development. The DARE looks after agricultural research and education, whereas DAC looks after extension. Indian National Agricultural Research System (NARS) is one of three largest R&D networks in the world. India’s first agriculture university (now G.B. Pant University of Agriculture & Technology) was established at Pantnagar in the year 1960. At present under the NARS, about 30,000 Scientists/teachers are working in 47 Central Institutes (CIs), 5 National Bureaus (NBs), 12 Project Directorates (PDs), 33 National Research Centers (NRCs), 91 All India Coordinated Research Projects (AICRPs), 440 Krishi Vigyan Kendras (KVKs, i.e. Farm Science Centers), 120 Zonal Agricultural Research Stations (ZRS), 10 Trainers Training Centers (TTCs), 44 Agriculture Technology Information Centres (ATIC), numerous regional research centers, 40 State Agricultural Universities (SAUs), 5 Deemed to be Universities (DUs) and 1 Central Agricultural University (CAU) (Jain and Goria, 2006; DARE/ICAR Annual Report, 2002-2003). They have been playing a vital role in providing education and research facilities for the development of agriculture in India and the
libraries of these have been acting as nodal centers by providing valuable information, catering to their needs since the inception of agricultural universities and institutions. The libraries in these organizations have also grown along with the growth and development of these organizations.

The agricultural libraries in India have to play a vital role by providing quick access to information. The Government of India is conscious of improving the state of agricultural libraries. In the past, many committees were appointed to meet the challenges of providing agricultural information efficiently. These were headed by Damle (1955), Ralph R. Shaw and D.B. Krishna Rao (1957), Randhawa (1960), Dorothy Parker (1969), and Edith Hesse (1997). Most of the recommendations made have since been accepted by the Indian Council of Agricultural Research (ICAR), though only a few have been implemented so far.

Rapid developments in science and technology, have led to a virtual information explosion in the world. To achieve an optimal utilization of these developments, it is essential that the scientists in the Indian National Agricultural Research System have quick access and free exchange of information at local, national and international levels. The global village, shrinking world, digital revolution etc. are some of the terms which are used to describe the importance of information. In this fast developing world, time is a crucial factor and availability of timely information is imperative to provide the cutting edge of any research programme. Fortunately, with the phenomenal development in computer technology India is in a position to accomplish the task of information management, so that the information is integrated, as well as disseminated and shared. The importance of information assimilation in agricultural development was recognized in India from the beginning of this century. The developments that occurred in the last few decades in information technology have created a growing awareness among those concerned with agricultural development. The important contribution that the agricultural library and information systems have made to the farming community, not only have
helped increase the yield level of crops but also alleviated the economic status.

Today, Agricultural university libraries are undergoing significant changes not only in outlook, but also in the function, services, methods and techniques used for collection, processing and dissemination of information made possible by applications of information and communication technologies (ICTs). Various factors like emergence of digital collection, electronic sources of information, library automation and networking, reorganizing of human resources etc. have posed challenges to agricultural library professionals, to keep pace with the complexities of present requirements. The agricultural university libraries have been far behind in adopting new technologies due to fewer funds, lack of trained staff, etc. There is a need for library professionals in India to look at agricultural library resource development in a wider perspective so as to cope with the changing role of library services. There is also a need to adopt newer tools and techniques of information technology, communication technology, library networking etc., to make library and information services user friendly and relevant to the parent organization. Information services to agricultural scientists and researchers have to deal with published literature on agriculture planning and development in all fields of agriculture, and the management and conservation of natural resources. The rate of accumulation of knowledge now in agriculture related areas is a hundred times more than it was at the beginning of the last century. About 9000 periodicals and more than one lakh books are published annually related to agriculture, along with innumerable number of other documents in various languages of the world (Nair, 1996).

Since the libraries of agricultural universities play a vital role in agricultural production by serving as effective centers of information communication, it is imperative that their organization, working and services are reviewed from time to time with a view to assessing how far they are able to accomplish the objectives for which they have been
established. There is also a need to formulate a policy for its healthy growth.

1.2 THE RESEARCH PROBLEM

The problem of the present study is entitled as: Use of Collection and Services in IARI Library and G.B. Pant Agricultural University Library: A Comparative Study.

1.3 OBJECTIVES

This study attempts to achieve the following objectives:

i. To determine how frequently, and for what purpose the students of the above mentioned universities use different categories of information sources and services in the library.

ii. To identify the type of E-sources used by the students of these two university libraries.

iii. To assess the form (print or electronic) of library collection and services in use in both the university libraries.

iv. To ascertain the adequacy of print and electronic collection in fulfilling the information needs of the students in both the universities.

v. To find out the attitude of library staff in assisting the students for searching the needed information.

vi. To know the level of satisfaction in using the collection and services by students of both the universities and to suggest suitable solutions.

1.4 SCOPE OF THE STUDY

Before and after independence, a large number of agricultural universities, institutes, colleges and research centers under ICAR along with their libraries consisting of a good collection of books and effective services came into existence. These have move towards building digital collections, electronic sources of information, and library automation and networking made possible by the emergence of new tools and techniques of
information technology. A number of studies have been made on development of information systems, resource sharing and networking in the context of special libraries serving engineering, health science, management, and other areas. There have also been many studies made on agricultural information systems in foreign countries. But only a very few studies exist on agricultural library and systems of India at either the national or the state level. An assessment of the achievements and failure of such information systems are essential to formulate realistic norms of their healthy growth. This needs a systematic study of the resources and services of various representative libraries serving functions related to agriculture and its various sub sectors in the region.

So far, no comparative study has dealt comprehensively with the use of agricultural university libraries collection and services as a whole in the country or state. It is difficult to select all the agricultural university libraries to conduct an in-depth study and therefore two agricultural university libraries that have been established very early on and, are run by center/state government with ample funds and good collection of resource material and services have been selected for research in this thesis. The agricultural university libraries selected for the study are:

i. Indian Agricultural Research Institute Library, New Delhi (Deemed University Library).

ii. Gobind Ballabh Pant University of Agricultural and Technology Library, Pantnagar (Uttarakhand).

This comparative study confines itself to the use of collection and services of the IARI and GBPUAT libraries; and further limits its study to the postgraduate students and research scholars, studying in the universities, where these libraries have been established.

1.5 HYPOTHESES

This research work has attempted to study the use of collection and services in the IARI and GBPUAT libraries. In this connection the following hypotheses are proposed to be tested:
i. There is significant difference between IARI and GBPUAT students (P.G. students and research scholars) who visit the library.

ii. There exists significant difference between IARI and GBPUAT students (P.G. students and research scholars) in terms of use of library collection and services.

iii. There exists significant difference in the level of adequacy of library collection of IARI and GBPUAT libraries.

iv. Library collection and services in electronic format in both IARI and GBPUAT libraries are used more by IARI and GBPUAT students (P.G. students and research scholars).

v. E-journals, CD-ROM databases and, online databases, slowly, but surely, are becoming an important part of library collection and services in both the libraries.

vi. There exists significant difference in the level of satisfaction of IARI and GBPUAT students (P.G. students and research scholars) regarding the use of the library collection and services.

1.6 LIMITATIONS OF THE STUDY

Due to large geographical dimensions of the country, it has not been possible to conduct the study on a truly national scale, and include all the aspects of an agricultural university library. Therefore, only two agricultural university libraries, the IARI library and GBPUAT library have been selected. Another limitation of the study is that it is confined to only collection and services and the user group analyzed is that of P.G. students and research scholars of these two agricultural university libraries. The study examines and compares the use of collections and services of both the agricultural university libraries along with detailed background.

1.7 LITERATURE SURVEY

Prior to the launch of the study, a survey of related literature was undertaken. The purpose of this exercise was to understand the already existing trends, findings and problems, so as to arrive at the right
perspective. The research topic was divided into various sections and a search was made for related resource materials in various journals, seminar/conference proceedings, etc. A bibliography was prepared of the most relevant and related research based articles. A detailed and in-depth study of these articles was done and the findings, noted down.

1.8 RESEARCH METHODOLOGY

The nature of the present study required the survey of IARI and GBPUAT libraries, which are situated in New Delhi and Uttrakhand. Data was collected from both the libraries to examine the differences among them. As such, the survey of a library is recognized as the best procedure for examining the use of collection and services of that library. According to *Harrods’ Glossary* (1984), “Survey is an account of some research examination, or enquiry which has been done by scientific or organized method”. It is one of the systematic methods of data collection, and involves questioning individuals on a topic, or topics and description of responses. A survey not only helps to recognize the past and present conditions, but also future requirements. The utility of the survey method has been pointed out by many social scientists. According to Moser (1993), “Survey has its usefulness both in leading to the formulation of hypothesis and, at a more advanced stage, in putting them to test. Their function in a given research depends on how much is already known about the subject and on the purpose for which the information is required”.

Sadhu and Singh (1992) pointed out that “Survey type of research has the advantage of greater scope in the sense that a large volume of information can be collected from a very large population. Survey research, no doubt, is more expensive, but the amount and quality of information that is collected makes such investigation very economical. This information is also accurate, of course, within the range of sampling errors because trained and technical by knowledgeable personnel are employed for the job”. A survey allows researchers to study larger groups more easily. In almost all cases it is not possible to survey the entire population. For the
results to be meaningful, a representative group should participate in the study, so that the findings can be generalized.

Taking into consideration the advantages and feasibility of the method, survey was decided as the most appropriate approach for this research study, which deals with the population of post graduate students and research scholars of IARI and GBPUAT.

The study covers two major areas:

i. Use of the collection present in IARI library and GBPUAT library by the students (P.G. students and research scholars).

ii. Use of services in IARI and GBPUAT libraries by the students (P.G. students and research scholars).

The methodology of the study is discussed under the following heads:

1.8.1 Sample Population

The presence of a large number of agricultural universities in India, makes it impossible to include all of them in the study. So, IARI and GBPUAT were selected for conducting in-depth study. IARI imparts education at post graduate and research levels while GBPUAT imparts education at under graduate, post graduate and research levels. The population of this study consists of two categories of users i.e. students (P.G. students and research scholars) of IARI and GBPUAT. Since the population size of IARI and GBPUAT are large, random sampling technique has been applied.

Questionnaires were distributed among 150 P.G. students and 100 research scholars at IARI, and 150 P.G. students and 100 research scholars at GBPUAT.

1.8.2 Data Collection

Today, large numbers of data collection techniques are available, such as questionnaire, schedule, interview, observation, etc. In this study,
the questionnaire and observation techniques have been used in data collection.

i. Questionnaire Technique

In survey research, the questionnaire is widely used to gather data on any particular problem. Questionnaires are administered upon a sample population in order to know their opinion, experiences and attitudes. The primary advantage of this technique is that one can make broad generalizations from a relatively small number of responses. For gathering data in this research study, the questionnaire and personal interview have been used.

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A questionnaire is a formulated series of questions especially for statistical study” (OXFORD, 1977). It is a written document, listing a series of questions, pertaining to the problem under study, to which the investigator requires the answers. For this study, a questionnaire was designed to get users’ viewpoint on various issues related to the use of collection and services in IARI library and GBPUAT library. Questions have been included to collect information about the use of collection as well as services.

- Designing of Questionnaire

Before designing the questionnaire, a thorough survey of literature related to the research topic was conducted, so as to get a complete understanding of the problem. Objectives of the study and hypotheses of the research were then formulated. The questionnaire covers the area of collection and services, and aims at comprehensive but accurate information related to investigation. The questionnaire (Appendix ) in this thesis is divided into two parts. Part A deals with the use of library collection used by the post graduate students and research scholars, while part B contains questions about the use of various kinds of library services.
• **Measuring Techniques**

In the investigation basically, the questionnaire has been used to gather data. Most of the questions consist of multiple choices where respondents have been asked to tick mark (✓) their answers. In addition, the following techniques have also been used to collect the requisite data.

- **Rating and Ranking Scale**
- **Likert- Five Point Scale and Three Point Scale**

There are several questions in the questionnaire which have open-ended answers where respondents were asked to give their opinion or suggestions.

• **Pilot Survey**

To find the validity of the questions, the questionnaire was distributed to 25 P.G. students and research scholars of IARI and GBPUAT. The main objective of this pilot survey was to find out respondents’ opinions, the language used, and to rule out ambiguities and doubts, if any, so as to procure accurate responses and results. During this exercise several suggestions were also received from P.G. students and research scholars of IARI and GBPUAT. In the light of these suggestions several questions were revised and some new questions were also added to the final draft.

• **Administering the Questionnaire**

The questionnaire was administered personally among 250 students (150 P.G. students and 100 research scholars) of IARI, and 250 students (150 P.G. students and 100 research scholars) of GBPUAT during the month of February-March 2005. 130 (52%) students (85 or 56.67% P.G. students and 45 or 45% research scholars) of IARI and 143 (57.2%) students (96 or 64% P.G. students and 47 or 47% research scholars) of GBPUAT returned the filled in questionnaires during the month of April-May 2005. Finally, 125 (50%) useable
questionnaires from the students (80 or 53.33% P.G. students and 45 or 45% research scholars) belong to IARI, and 137 (54.8%) useable questionnaires from the students (90 or 60% P.G. students and 47 or 47% research scholars) belong to GBPUAT were taken for analysis and interpretation.

ii. Observation Technique

In this method, information is sought by way of the investigator's own direct observation. It is a good technique used to collect data. To verify the availability of different type of sources and services, a visit was made to the IARI and GBPUAT libraries. It was also noticed that there is a wide gap between the information provided by students in terms of collections and services. This technique led to make this study more scientific and fruitful.

1.8.3 Sources Scanned

Data for the present study has also been collected from some valuable primary sources (i.e. library manual, annual reports, souvenir, journals, pamphlets, prospectus, etc.), and secondary sources (i.e. dictionaries, encyclopedias, handbooks, etc.). In addition to this, the websites of agricultural universities were also scanned for much needed information.

1.8.4 Data Analysis and Interpretation

After having received the responses from P.G. students and research scholars, the task of data analysis and its interpretation was begun. Data analysis is the process of bringing order, structure and meaning to the mass of collected data. To give form and meaning to the statistical data through interpretations and conclusions, the collected data from the P.G. students and research scholars of IARI and GBPUAT were organized, tabulated, analyzed and interpreted and compared in the light of objectives set forth in this study. All the variables were defined, and values were assigned. Moreover, this study may also be used as a basis for an elaborate comparative study between the use of library collection and services of
IARI and GBPUAT students (P.G. students and research scholars). The tools used in this study are:

i. Frequency distribution, percentages, mean scores and ranking techniques in the course of data analysis have been used to identify the frequency, purpose and the level of satisfaction of IARI and GBPUAT students regarding the use of library collection and services.

ii. Tables and graphs after analyzing the collected data have been prepared for all the variables using MS-Word and MS-Excel Package.

iii. Likert’s five-point scale of 4-0 (as 4 stands for ‘most frequently’, 3 for ‘frequently’, 2 for ‘somewhat frequently’, 1 for ‘occasionally’ and 0 for ‘never’) was used to rate the frequency, purpose and satisfaction of the total students regarding the use of collection and services. Adequacy level of collection was also analyzed at three point scale (as 2 stands for ‘adequate’, 1 stands for ‘fair’ and 0 stands for ‘inadequate’). The mean score for each one of the sources has been calculated by multiplying the raw score with the corresponding value of the three or five point scale and the sum of it is divided by N i.e., number of respondents.

iv. The chi-square test of independence has been applied to show the difference between the use of library collection and services of IARI and GBPUAT and to test the hypotheses.

\[ \chi^2 = \frac{(fo-fe)^2}{fe} \]

Where, fo stands for observed frequency, and

fe stands for expected frequency.

On the basis of these tables and graphs, findings and conclusion of this research study have been derived.
REFERENCES


