STATUS OF AGRICULTURAL LIBRARIES IN INDIA : A CRITICAL ANALYSIS

S P Jain
Librarian
G.B. Pant University of
Agriculture & Technology
Pantnagar - 263 145 (UP)

Sunil Goria
Assistant Librarian
G.B. Pant University of
Agriculture & Technology,
Pantnagar - 263 145 (UP)

Attempts to know the present conditions of agricultural libraries in India. This study is based on the analysis of professional staff, users, collection, budget, computerization (hardware and software) and mechanized information services existing in the agricultural libraries. A comparative data in tabular form of 19 State Agriculture University (SAU) libraries out of 30 and 37 ICAR institute libraries out of 50 are drawn for showing the strengths and weaknesses of agricultural libraries. Suggests the establishment of a National Agricultural Library by considering all the factors affecting the development of agriculture. This data will be useful for planning and policy making of agricultural libraries.

INTRODUCTION

Agriculture is one of the most vital sectors in India that controls the economy of the country. It supports directly or indirectly about 70 percent of the Indian population for their livelihood. Both the central and state governments are involved in the formulation and implementation of policies and programs to achieve rapid agricultural development. The country has 329 million hectares of land area; nearly half of it is arable. Agriculture requires land, sunshine, and rain, which the country has, in abundance. Nature too is generous and India is blessed with varied agro-climatic conditions as demonstrated by success of green, white, blue and golden revolutions. Besides agriculture is one of the few sectors in India which enjoys international competitiveness.

The Indian "National Agricultural Research System" (NARS) is a vast network for research and education in agriculture. In this network there are 25,000 scientists working at 50 central institutes, 10 Project Directorates (PDs), 28 National Research Centers (NCRs), 82 All India Coordinated Research Projects (AICRPs), 261 Krishi Vigyan Kendras (KVKs), 120 Zonal Research Stations (ZRSs), and numerous regional research centers. They are generating knowledge by developing technologies in various fields of agriculture. Indian scientists have been carrying out pioneering work in fields as diverse as molecular biology, dry land crop production, agricultural engineering and other areas of agriculture. There are 29 state and one central agricultural university apart from four deemed universities, providing education for the development of agriculture and with the back up of 'Extension Services'. These programmes provide necessary education and training support for the agricultural development in India.

Agricultural development in India is faced with new challenges and opportunities on food, nutrition, population and environment fronts. Agricultural libraries of India have to play a vital role to face these challenges by providing quick access to information. The Government of India is conscious of improving the conditions of agricultural libraries. In the past, many committees were appointed to meet the challenges of providing agricultural information. These were headed by Damle (1955), Ralph R.

Shaw and D. B. Krishna Rao (1957), Randhawa (1960), Dorthy 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. A large number of workshops, seminars and conferences for agricultural libraries were held at different places from time to time. These workshops, seminars and conferences formulated a number of recommendations for the development of agricultural libraries and their services, and passed various resolutions for consideration.

PRESENT STATUS

In early 1991, for strengthening the information management culture using modern information technology within the Indian National Agricultural Research System, the ICAR initiated a project called Agricultural Research Information System (ARIS). For implementation of ARIS, funds were provided by Government of India and the World Bank. The specific objectives of ARIS are:

- To bring agricultural information closer to managers and scientists.

- To improve the capacity of research organizations.

- To organize, store, and retrieve information relevant to their mandates.

- To develop regular procedures and mechanism for these organizations to share information.

- To improve the capacity of these organizations to plan, monitor and evaluate their research programs.

Library plays an important role in all academic and research activities. It is therefore, absolutely essential that library facility in all agri-institutions be well developed. Agricultural Research Library Information System (ARLIS) is one of the modules of ARIS for Library Improvement and Networking

(LIN) and has been developed under Information System Development (ISD) scheme. ARLIS envisages that the library services should be improved by means of modern network facilities, using computers and satellite communications technology, so that the resources at one place can be utilized at multiple places under conditions of scarcity of funds. Thus, information generated at national and international levels can be made available online to the agricultural scientists and the gap of information/literature be identified and filled up.

SCOPE OF STUDY

The scope of this study is to examine the present status of Indian agricultural libraries and to suggest a model for their development, so that the libraries can meet the challenges of information dissemination in the electronic era. The parameters investigated include the professional staff working in libraries, collection, budget, and the level of computerization existing in these libraries. The data is tabulated into two parts, one dealing with the libraries of State Agricultural Universities and the others dealing with libraries of ICAR institutes. This data has been collected through questionnaire and from various other documentary sources.

ANALYSIS

The analysis is based on the data collected from 19 out of 30 agriculture university libraries and 37 out of 50 ICAR institute libraries. The analysis and suggestions are given below:

Professional Staff

Out of a total of 317 professional staff, 175 are engaged in SAUs and 142 in ICAR institutes. Of these 4.42% constituted Ph.D, 41.64% postgraduates, 30.91% graduates and 23.03% certificate holders. Only 35.96% staff has computer literacy. It was noted that ICAR institutes had more qualified staff than the SAUs as shown in Table-1.

Table 1

Professional staff

	Ph.D.	P.G	Graduate	Certificate	Total	Computer personnel
SAUs	6	68	51	50	175	45
	3.43%	38.86%	29.14%	28.57%	100%	25.7%
ICAR institutes	8	64	47	23	142	69
	5.63%	45.07%	33.10%	16.20%	100%	48.59%
Total	14	132	98	73	317	114
	4.42%	41.64%	30.91%	23.03%	100%	35.96%

Information handling in the present era is greatly influenced by information technology tools and techniques. This necessacitates imparting computer training to the staff working in agricultural libraries to improve their services. In order to make efficient use of computers and communication technologies, the training should be planned and designed in such a manner as to include appropriate library automation software packages along with fundamentals of information technology, i.e., computer fundamentals, operating system, MS-Office, CD-ROM, e-mail, Internet, etc. Apart from CDS/ISIS, any integrated and multi-user library automation software package should also be included for training. Besides this formal training, there is a need for sharing the experiences on a continuous basis among the library professionals; hence annual meetings, workshops, conferences, etc., should be organized regularly and some of the persons should be sent outside the country for exposure to new techniques.

Library Users

Approximately 75,724 local users are using agricultural libraries, and roughly 7,120 users are from outside the agricultural organizations. In the SAUs the library users consist of students, research scholars and teachers, while in ICAR institutes, the main users are scientific and technical personnel. The requirements of SAUs are different from ICAR institutes, and hence, the

services and publications added should be as per their requirements. The use of computers in library will be beneficial only when the users are also exposed to the use of computers, hence there should be provision to train the users in the use of computer, especially for information retrieval.

Collection

The annual growth of collection of these libraries consists of 28,816 books, 5,670 periodicals, 1,917 non-book materials and 9,013 other documents. SAUs' libraries include textbooks in multiple copies to satisfy the demands of students, while ICAR institutes mainly gave emphasis on research monographs and journals. There are 5,670 periodical titles annually added in these libraries. This growth covers the multiple subscription of journal titles by a number of libraries, which indicates that resource sharing among agriculture libraries are not prevalent. There is an urgent need for compilation of a union catalogue of agricultural serials for rationalization of journal subscriptions. A copy of this union catalogue should be available in each SAU and ICAR institute library and multiple subscription of journal titles should be avoided as far as possible. The ranking of agricultural libraries based on their collection, annual growth and budget can be seen from Table 2A. Networking of agricultural libraries is an urgent need of the hour, to share the resources among these libraries, and efficient

electronic document delivery service should be added in these libraries, for fulfilling the demand of journal articles at national level. A preference should also be given for subscription of journals in electronic media.

Library Budget

The libraries are spending more than Rs.12 crore for the purchase of books, journals and other documents as shown in Table 2B. Out of this, Rs.2.3 crore are spent on books, Rs.8.2 crore on journals and Rs. 1.5 crore on other documents annually. Agricultural libraries are special libraries and they spend maximum of their budgets on journal subscription (about 60% to 70% of budgets). The World Bank development funds have been provided to these agricultural libraries for the purchase of computers and for the improvement of their collection under National Agricultural Technology Project (NATP). In order to modernize the libraries and information system in agricultural sector, a total budget of Rs.130 crore under NATP has been earmarked, of which an amount of Rs.94 crore has been allocated for ARIS, and Rs. 36 crore for the development of library component in Information System Development (ISD).

Table 2A

Library collection and budget

	19 SAU Libraries			37 ICAR Institute Libraries		
	Collection (in thousands)	Annual Growth (in hundreds)	Budget (in Rs.lakhs)	Collection (in thousands)	Annual Growth (in hundreds)	Budget (in Rs. lakhs)
Very small	**3** ≤ 30	**3** ≤ 3	**2** ≤ 5	**8** ≤ 5	**7** ≤ 1	**7** ≤ 5
Small	**6** >30 ≤ 80	**5** >3 ≤ 8	**5** >5 ≤ 10	**13** >5 ≤ 20	**13** >1≤ 3	**11** >5 ≤ 10
Medium	**7** >80 ≤ 150	**8** >8 ≤ 30	**8** >10 ≤ 50	**11** >20 ≤ 50	**12** >3 ≤ 10	**13** >10 ≤ 20
Big	**3** >150	**3** >30	**4** >50	**5** >50	**5** >10	**6** >20

Note : Bold numbers indicate number of libraries.

Table 2B

Total library collection and budget

19 SAU Libraries			37 ICAR Institute Libraries		
Collection	Annual Growth	Budget Rs.	Collection	Annual Growth	Budget Rs.
18,43,282	29,154	5,71,34,615	13,10,424	16,334	6,40,47,793

Library Computerization

Computerization of agricultural libraries is a recent phenomenon and most of the libraries are using latest computers as shown in Table 3. Pentium computers are used in 63.7% libraries and 64.3% have CD-ROM facilities. Scanners are being used in 19.6% libraries. Most of the libraries use stand alone Windows Operating Systems. There is a need for developing LAN, so as to improve their efficiencies. As far as the in-house activities of computerization are concerned, they are at the initial stage. Only cataloguing and bibliographic services are computerised. This is because CDS/ISIS software package was initially available free of cost in India. Almost 35.7% libraries as shown in Table 4 are using this package. Other computerization activities of libraries are in nascent stage as shown in Table 6. The other software packages which are available in agricultural libraries are Libsys (14.3%) and Techlib plus (7.1%).

Table 3

Hardware

	Computers			Facilities		
	PC-486	Pentium	Main frame	CD-ROM	Scanner	Modem
SAUs	16 21.9%	54 74.0%	3 4.1%	11 57.9%	2 10.5%	4 21.0%
ICAR institutes	35 41.7%	46 54.7%	3 3.6%	25 67.6%	9 24.3%	10 27.0%
Total	51 32.5%	100 63.7%	6 3.8%	36 64.3%	11 19.6%	14 25.0%

Table 4

Software

Operating System				Application Software								
				DBMS			Networking			Word processors		
	a	b	c	A	B	C	i	ii	iii	I	II	III
SAUs	10 52.6%	13 68.4%	3 15.8%	5 26.3%	1 5.3%	2 10.5%	4 21%	3 15.8%	2 10.5%	6 31.6%	2 10.5%	11 57.9%
ICAR Institute	19 51.3%	25 67.6%	4 10.8%	15 40.5%	7 18.9%	2 5.4%	8 21.6%	6 16.2%	3 8.1%	8 21.6%	5 13.5%	18 48.6%
Total	29 51.8%	38 67.8%	7 12.5%	20 35.7%	8 14.3%	4 7.1%	12 21.4%	9 16.0%	5 8.9%	14 25.0%	7 12.5%	29 51.8%

Operating System	:	a- DOS	b- Windows	c- Unix
DBMS	:	A- CDS/ISIS	B- Libsys	C- Techlib plus
Networking	:	i- Novell	ii- Windows NT	iii- Unix
Word processing	:	I- Word Star	II- Word Perfect	III- MS-Word

Mechanized Information Service

The study shows that 36.84% SAUs and 56.75% ICAR institutes are developing their own bibliographic databases as shown in Table 5. This local bibliographic database is essential for every library in order to provide prompt information retrieval service. Presently in India, there is no comprehensive bibliographic database in agriculture sciences. Therefore there is an urgent need to compile and develop an Indian agricultural bibliographic database for identifying the publications and fulfilling the demand of literature produced by Indian researchers. This database can be used to produce Indian Agricultural Bibliography (IAB). Although this work has been assigned to ARIS, they are also coordinating in AGRIS project from India, but their coverage is very poor, and hence IAB database should be compiled collaboratively by several key institutions in their specialized disciplines. IARI should index all Indian journals, books, theses, proceedings and research bulletins in crop science, National Diary Research Institute (NDRI) in dairy science, Indian Veterinary Research Institute (IVRI) in animal science, Central Institute of Fisheries Education (CIFE) in fisheries, Indian Institute of Horticulture (IIHR) in horticultural science, etc. Grey literature should also be included in these databases. Cropwise database should be developed by individual institutions according to their specialized area, e.g., 'NRC for soybean'. Indian contribution in foreign journals is also increasing day by day. All these databases should index Indian contributions in Indian and foreign journals, theses, conference proceedings, research bulletins etc.

E-mail and Internet services are frequently used in agricultural libraries as shown in Table 5 (51.78% for E-mail and 39.28% for Internet).

Table 5

Services

	Bibliographic database developed	Services			Total
		E-mail	Internet	Multimedia	
SAUs	7 36.84%	8 42.10%	7 26.31%	5 26.31%	19
ICAR institutes	21 56.75%	21 56.75%	15 40.54%	4 10.81%	37
Total	28 50.0%	29 51.78%	22 39.28%	9 16.07%	56

INDIAN NATIONAL AGRICULTURAL LIBRARY

In 1968, for the first time an Indo-American Agricultural Library Survey and Study Team proposed to develop IARI Library as Indian National Agricultural Library. The responsibility of National Agricultural Library is to coordinate, analyze and disseminate agricultural information in the country. Unfortunately even after three decades, it has not been functioning as National Agricultural Library. Agriculture is a multi-disciplinary subject consisting of crop science, horticulture, soil science, agronomy, agro-forestry, agricultural engineering etc. Apart from these disciplines, animal sciences and fisheries are other most important disciplines of agriculture science.

Indian Agricultural Research Institute (IARI) is a crop science research institute with a huge collection mainly on crop science and related subjects. But these days animal sciences and fisheries are other important disciplines, playing an important role in fulfilling the food and nutrient requirements of the nation. These disciplines cannot be ignored while considering agriculture sector as a whole. It will be certainly an additional burden on the IARI library if it has to fulfill the demands of these disciplines at national level under the role of National Agriculture Library. The ARIS recommendations/guidelines for improving the collection and services of libraries, namely, Indian Agricultural Research Institute (IARI)

library, New Delhi; Indian Veterinary Research Institute (IVRI) library, Izatnagar; National Dairy Research Institute (NDRI) library, Karnal; and Central Institute of Fisheries Education (CIFE) library, Mumbai are therefore laudable. These libraries are thus, to be developed into National Agricultural Libraries in their respective disciplines. But this will not serve the purpose of coordinating the resources and services of agricultural libraries at one place for fulfilling the future demand by filling the gap of literature.

There is an urgent need for one library dealing with all these disciplines to coordinate the activities at national level. It will be the responsibility of the proposed library to fulfill the gap of collection and services in agriculture at national level, by coordinating the collection and services of all agricultural libraries. In this way, the resources and services are uniformly developed and duplication can be avoided. No doubt IARI Library was already recommended to act as National Agricultural Library. But IARI Library emphasis will continue to be based on crop sciences. Therefore, other sciences will not be developed independently under the banner of IARI as National Library. In the age of electronic documentation there is not much importance attached to actual physical location of documents. Therefore, either the ICAR Library at Krishi Bhavan, New Delhi or any State Agricultural University can be assigned the role of coordination, and declared the National Agricultural Library in preference to IARI.

Table 6

Computer application : house keeping operations

	Acquisition	Cataloguing	Circulation	Serial Control	Bibliographic	Finance	Admin.
SAUs	1 5.6%	7 36.84%	0 0%	4 21.05%	6 31.57%	0 0%	3 15.78%
ICAR institutes	8 21.62%	12 32.43%	6 16.21%	6 16.21%	14 37.83%	3 8.10%	3 8.10%
Total	9 16.07%	19 33.92%	6 10.71%	10 17.85%	20 35.71%	3 5.35%	6 10.75%

CONCLUSION

Agricultural libraries in India are in the initial stage of development. Modern technologies in the libraries are now being utilized to satisfy the information needs of the users. There is an urgent need to plan the allocation of resources and services at the national level so as to avoid duplication of efforts. The staff working in these libraries need training and exposure to new techniques available at national and international levels. The budget available in these libraries is not sufficient for the overall growth of these libraries. Some formula has to be developed for earmarking the budget for library based on the total budget allocated to the organization. Emphasis at this stage is for the development of LAN in the libraries. There is a need to develop the culture of inter-library loan service, and electronic transmission of documents, particularly articles. The bibliographical details of theses, journal articles, and library catalogues must be available at a web site for the use of readers.

There is an urgent need to compile and develop an Indian Agricultural Bibliographic database. This database should be compiled collaboratively by serveral key institutions. Thus IARI should index all Indian journals, books, theses, proceedings and research bulletins in crop science, NDRI should index these in dairy science, IVRI in animal science, CIFE in fisheries, IIHR in horticultural science in order to produce Indian Agricultural Bibliography (IAB). ICAR Library or any SAU library may be identified, as the National Agricultural Library in preference to IARI Library. This point needs to be seriously considered, as IARI will continue to focus its collection towards the needs of crop science research to the disadvantage of other disciplines of agriculture.

REFERENCES

1. ANNUAL REPORT, 1999-2000. 2000. New Delhi; Indian Council of Agricultural Research.

2. JOINT INDO-AMERICAN TEAM ON AGRICULTURAL EDUCATION AND RESEARCH. 1st Report. 1955. New Delhi, ICAR. (Chairman: DAMLE K R).

3. SHAW (RALPH R) and KRISHNA RAO (B D). Report on Library and Bibliographic Services for Agricultural Teaching and Research in India. 1957; New Delhi; ICAR.

4. JOINT INDO-AMERICAN TEAM ON AGRICULTURAL EDUCATION RESEARCH AND EXTENSION. 2nd Report. 1960; New Delhi, ICAR; (Chairman RANDHAWA M S).

5. INDO-AMERICAN AGRICULTURAL LIBRARY SURVEY AND STUDY TEAM. Final Report. 1969; New Delhi; ICAR; (Chairman: DOROTHY PARKER).

6. EDITH (HESSE). World Bank consultancy for the Indian Council for Agricultural Research (ICAR) on Library and Information Services. 1997. New Delhi; ICAR.

7. AGRICULTURAL RESEARCH INFOR-MATION SYSTEM (ARIS). Strategies and guidelines under NATP. 1999; New Delhi; ICAR.