

Periodicals Collection Development in Agricultural University Libraries: Case Study of Maharashtra

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Abstract

Standards and norms of Agricultural University Library are given. This study is limited to four agricultural university libraries in Maharashtra from financial year 1995-96 to 2000-2001. In this study development in periodical collection was observed. The saving of subscription by networking was about 52,06,988 and cost of networking these four libraries was Rs.98 lacks. Vsat Internet connectivity to the libraries under study was already available. The consortium can be formed as a society, under the society registration act as a non profit organization. Presently cera.jccc.in ICAR consortium site is available for all agricultural university libraries in India and through that 2000 + online journals are available for online search.

Keywords: Financial year; Periodical collection; Consortium; Vsat Internet connectivity.

Introduction

The role of university library is emphasized in teaching, research and extension activities. This role should be reflected in its library collection which has to provide learning material for faculty for students, teachers, research workers and extension workers.

Library is a place for storing Knowledge under a system that facilitates identification and retrieval as needed by the users. University library is defined as a library, or a system of libraries, established, supported and administered by a university, to meet the information needs of its students, faculty, research and service programs.

Information is published and communicated through journal articles, conference papers, technical reports, theses, patents, specification, standards, monographs, databases, websites, etc. in all subjects.

Indian Council of Agricultural Research (ICAR) is the apex organization at the National level for the promotion of science and technology programme in the areas of agricultural research and education. ICAR acts as a repository of information and provides consultancy on agricultural engineering, fisheries, agricultural extension, agricultural education, women science and agricultural communication. It has the mandates to co-ordinate agricultural research and development programmers and develop linkages at national and international level with related organizations to enhance the quality of the farming community.

Agricultural Education in Maharashtra

There are four agricultural universities and one veterinary science university in Maharashtra State. Present study is restricted to only four agricultural university libraries in Maharashtra namely (1) Marathwada Agricultural University Library Parbhani, representing Marathwada region, (2) Dr. Panjabrao Deshmukh Krishi Vidyapeeth Library Akola, representing the Vidarbha region, (3) Mahatma Phule Krishi Vidyapeeth Library Rahuri, representing Western Maharashtra and (4) Balasaheb Sawant Konkan Krishi Vidyapeeth Library Dapoli,

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representing Konkan and Mumbai region. These four agricultural universities are headed by Maharashtra Council of Agricultural Education and Research (MCAER), Pune.

Collection Development

Development of agricultural libraries in India is essential prerequisite for development of agricultural research and educational institutions in India. Any agricultural library has a special collection of books, periodicals and other material organized to serve the needs of those engaged in agricultural production.

Standards and Norms of Agricultural Libraries in India

Agricultural libraries in India follow the standards and norms development by the University Grant Commission of India as described in the Indo-American Library Report (ICAR, 1969). The section 54 under the chapter 7 to the said report reads that "it is recommended that the standards developed by the libraries committee of the UGC be adopted by all ICAR institute libraries and agricultural university libraries as minimum requirements and that the future revisions of the UGC standards be adopted as they appear as ICAR's minimum standards. Following are the functions of collection development policy.

The first and foremost function is to identify the relevant reading material required for the on-going programmes of the parent institutions.

The location of the required reading material by subject, by author, by title, by publisher, by source, by distributors or by book seller, etc.

To match the requirements with available resources, here the priorities are to be worked out.

The acquisition of reading material through the reliable channels.

The recording/accessioning work.

Influence of Information Technology on Libraries

Another development which has influenced library activities is Information Technology (IT) applications with the emergence of internet. internet is popularly known as the network of networks. It is now used world wide for personal and group communication, file transfer and for accessing databases on remote computers. Sources like electronic journals, pre-prints, technical reports, numerical and graphic data, software, databases, standards, information on societies, institutions associations, etc. are available on internet. The digital libraries can be accessed through the world wide web (www). Electronic library gives users on line access not only to its on line public catalogue but also to verity of other electronic resources located both within and outside the library.

In electronic environment, most of the information is released Commercially. On licensing for use by libraries consortia approaches for Licensing can be made available by the consortium of the libraries, Amount of subscription. This can result in considerable savings in costs for Expensive electronic products. The combined buying power of the Consortium has a better chance, than to individual libraries. The ability to Provide immediate access from anywhere makes it more shareable than the Peripheral material.

Library Network

Financial constraints have forced the libraries to think of resource sharing and cooperative acquisition of reading material. Every library attracts the facility of network in present age for optimum utilization of resources and offer better services to their users. Even though it is initially cost and technical oriented, every librarian desires to join in his related network for pooling resources for effective resource sharing. A network is a form of agreement or an

administrative structure that links a group of individuals. Organisations and networks who have agreed to work together and share resources.

Objectives of the study

Present research aims to find out such common platforms and tries to suggest requirements to develop effective resources sharing useful to agricultural university libraries in the state.

To find out the present situations of periodicals collection in agricultural university libraries in Maharashtra.

To find out the availability of journals.

To find out the present funds position of the agricultural university libraries.

To find out the method to share the resources with other libraries through network.

To bring uniformity in networking approach (Hardware & Software)

Hypothesis

For the purpose of the present investigation, the following hypothesis was taken up.

Drastic curtailment of funds since 1996-97, has affected the collection development programme of the agricultural university.

The new technology specially information technology has made it essential to share the resources.

No efforts are being taken by the agricultural universities to share the resources.

There is wastage of funds by subscribing common periodicals and databases.

Methodology

Data required for present research was obtained from four agricultural universities in Maharashtra through schedule method. A

schedule containing a series of questions was prepared. The concerned data was collected for the period 1995-96 to 2000-2001 i.e. of six years. Researcher visited all agricultural university libraries under study. The concerned data was also collected by interview with the librarians of the libraries under study. The collected data was matched with figures of information sources available in the concerned libraries. After matching, the information was arranged in different tables for presentation and analysis. Observations were recorded in form of discussion and findings of the study.

The efforts were made to find out common and uncommon collection, larger and smaller collection, the effects of new funds formula on collection development, core collection, useful collection, etc.

Case Study

The overall purpose of case study is to obtain comprehensive information about the research object. Data collecting methods used in case study are based primarily upon direct observation. In this method both participant and nonparticipant observations can be used. When necessary, these methods are supplemented by structured techniques such as interviews and questionnaires. In the present study the researcher has used case study method.

Scope and Limitations

Present study is limited to the available Periodicals in the agricultural university libraries in Maharashtra. The study is limited to the four agricultural university libraries in Maharashtra from the financial year 1995-96 to 2000-2001. This study will be useful for the process of modernization of collection development of the libraries under study. The lists of current information sources were collected for cost analysis. The list of Indian and foreign periodicals and databases (online and offline) available in the libraries under study was collected by the investigator. The

Table 1: Library Users Inside the University Campus

Sr. No	Name of the Library	No. of colleges In the campus	No. of students	No. of staff	Total number of users
1.	Dr. Panjabrao Deshmukh Krishi Vidyapeeth Library, Akola.	4	1318	1565	2883
2.	Mahatma Phule Krishi Vidyapeeth Library, Rahuri.	1	1030	1014	2044
3.	Marathwada Krishi Vidyapeeth Library, Parbhani.	5	2340	1682	4022
4.	Balasaheb Sawant Konkan Krishi Vidyapeeth Library, Dapoli.	1	859	317	1176
		11	5547	4578	10125

lists of hardware and software including computers available in these libraries were also collected. The contingency budget provisions and expenditure figures for purchasing periodicals were collected through schedule method. Information about the apex institute i.e. ICAR was also collected from its web-site in the month of December 2001 and also from the annual report of the year 1999-2000.

Data Collection and Analysis

The core tasks of libraries changed from collection development to a structured supply of information and its immediate availability. A new role is required for increasing (inter) national co-operation between libraries to improve and accelerate inter library loan and document delivery. The use instead of the "Owned" collections became the focus for the development of new services and technical facilities. These were development to make it possible for the user to access and retrieve from his work station, irrespective of collection of all kinds of information.

In the present study the latest development in Periodicals collection availability and its accessibility to the library by users were observed considering latest six years acquisitions.

Library Users

The information about library users of the libraries under study is shown in Table 1. The total number of users in four agricultural university libraries was found 10125 out of them 5547 were students and 4578 were staff

members. These are the users from the campus only. The members from out side the campus of the universities also use the libraries. It was found that large number of users e.g. 4022 were in Marathwada Agricultural University Library, Parbhani , Dr. Panjabrao Deshmukh Krishi Vidyapeeth Library, Akola, Mahatma Phule Krishi Vidyapeeth Library, Rahuri and Dr. Balasaheb Sawant Konkan Krishi Vidyapeeth Library, Dapoli and had 2883, 2044 and 1176 users respectively. Marathwada agricultural is having 5 colleges in side the university campus at Parbhani.

Specialized Subject in Each University.

The uncommon or specialized subjects available in each university are shown in Table 2 below.

Collection of Back Volumes of Periodicals

Back volumes collection of the periodicals in the libraries under study was collected yearly for the six years up to the year 2000-

Table 2: Uncommon or Specialized Subjects

Sr. No.	Name of Library	Subject
1	Dr. Panjabrao Deshmukh Krishi Vidyapeeth Library, Akola.	Forestry
2	Mahatma Phule Krishi Vidyapeeth Library, Rahuri.	Irrigation and water Management
3	Marathwada Krishi Vidyapeeth Library, Parbhani.	Food Science and Nutrition
4	Balasaheb Sawant Konkan Krishi Vidyapeeth Library, Dapoli.	Fishery

Table 3: Collection of Back Volumes of Periodicals

Period	Dr. Panjabrao Deshmukh Krishi Vidyapeeth Library, Akola.	Mahatma Phule Krishi Vidyapeeth Library, Rahuri.	Marathwada Krishi Vidyapeeth Library, Parbhani.	B.S Konkan Krishi Vidyapeeth Library, Dapoli.
1995-96	41355	17609	41350	4232
1996-97	42450	22315	45096	6796
1997-98	43200	22315	45358	6919
1998-99	43200	22470	45504	7011
1999-2000	43355	22816	45669	7100
2000-2001	43355	23357	45845	7885

Table 4: Yearly Number of Journals Subscribed

Sr. No	Name of the library	Yearly Number of Journals Subscribed					
		1995-1996	1996-1997	1997-1998	1998-1999	1999-2000	2000-2001
1	Dr. Panjabrao Deshmukh Krishi Vidyapeeth Library, Akola	268	268	182	191	161	179
2	Mahatma Phule Krishi Vidyapeeth Library, Rahuri.	24	--	22	155	167	165
3	Marathwada Krishi Vidyapeeth Library, Parbhani.	362	116	110	112	112	96
4	B.S Konkan Krishi Vidyapeeth Library, Dapoli.	124	123	92	89	97	54

Table 5: Expenditure on Current Periodicals During Last 6 Years

Sr. No	Name of the library	1995-1996	1996-1997	1997-1998	1998-1999	1999-2000	2000-2001	Total
1	Dr. Panjabrao Deshmukh Krishi Vidyapeeth Library, Akola	1293202	1511270	1682117	501999	739972	484655	6213215
2	Mahatma Phule Krishi Vidyapeeth Library, Rahuri.	400000	251221	150322	520025	603027	547267	2470267
3	Marathwada Krishi Vidyapeeth Library, Parbhani.	1460000	241035	159157	217159	35000	584092	2696443
4	B.S. Konkan Krishi Vidyapeeth Library, Dapoli.	250000	38085	11381	40500	33344	368717	742027

2001 and is shown through the Table 3.

Table 3 shows that Marathwada Krishi Vidyapeeth library Dr. Panjabrao Deshmukh Krishi Vidyapeeth Library was having larger collection of back volume i.e.45845 and Balasaheb Sawant Konkan Krishi Vidyapeeth library had lowest collection i.e. of 7885 back volumes. The rate of periodical back volumes collection development was very low in these libraries in study period. It shows the curtailment of periodical subscription was adopted due to shortage in funding.

Expenditure on Current Periodicals

Yearly expenditure on current periodicals was collected and analysed for availability of current periodicals collection. It has been observed that the rates of subscription of periodicals are constantly increasing and funds provision is decreasing and resulting in decrease of the number of current periodicals

in all the four university libraries under study due to the decreased availability of budget. The libraries had curtailed the number of journals subscribed. Curtailing of the periodicals affect the information services. The users could not get the information required for their work. The details of expenditure incurred for subscription of periodicals for the libraries under study are given in Table 5.

It was observed that in the year 1995-96, the expenditure on subscription of periodicals made by Dr. Panjabrao Deshmukh Krishi Vidyapeeth and Marathwada library, was 12, 93,202 and 14,60,000 respectively which was reduced to 4,84,655 and 5,84,092 for the years 2000-2001 and figures show that both the libraries previously had large number of periodicals . It was reported by the librarians in the interview that till 1995, these libraries were getting grants from the State Government for purchase of reading materials

Total 6: Current Journals in the Year 2000-2001

Sr. N	Name of the Library	Indian	Foreign	Gratis	Total
1.	Dr. Panjabrao Deshmukh Krishi Vidyapeeth Library, Akola.	128 (46.20)	51 (18.41)	98 (35.37)	277 (100)
2.	Mahatma Phule Krishi Vidyapeeth Library, Rahuri.	137 (52.49)	28 (10.72)	96 (36.78)	261 (100)
3.	Marathwada Krishi Vidyapeeth Library, Parbhani.	87 (33.33)	9 (3.44)	165 (63.21)	261 (100)
4.	Balasaheb Sawant Konkan Krishi Vidyapeeth Library, Dapoli.	392 (42.60)	102 (11.08)	426 (46.30)	920 (100)

through the head material and supply. This assistance was reduced up to 1/20th funds. It was reduced to 15% of the annual salary payment of that library staff; every year which has resulted in curtailment of budget for library as shown in Table 5. After applying new funds formula from dated 13th Oct. 1995 through G.R.No. agri. V2191/CR -128/20A, expenditure on the subscription of periodicals has decreased badly. Now a days CD ROM databases, online database subscription and networking of sources through consortium could help the libraries for bibliographical control of the information sources.

Agricultural libraries under study are not having journals in electronic form except electronic databases at present. The abstracting and indexing databases were made available in less number.

As shown in the Table 6. the number of gratis current journals available in the libraries was larger than the number of journals subscribed. In Dr. Panjabrao Deshmukh Krishi Vidyapeeth Library during the years 1995-96 total journals available were, 624, out of which subscribed journals were 268. The other libraries were getting comparatively less journals on gratis in the corresponding years.

The number of journals available in the library during the year 2000-2001 include subscribed + gratis + exchange basis journals and 46.3 per cent current journals were available on gratis in these libraries. On an average the available Indian journals were 43.65 per cent and foreign journals were 10.91 per cent in the libraries under study. It was also found that Marathwada Krishi Vidyapeeth Library received 165 journals on gratis and Balasaheb Konkan Krishi Vidyapeeth Library had 67 journals on gratis in time.

It can be observed from the Table 6 that the number of foreign journals subscribed was smaller than the number of Indian journals in all the libraries under study. The Marathwada Krishi Vidyapeeth Library was having 104 foreign journals in the year 1994-95 i.e. this library had curtailed the number of foreign journals from 104 to 9. The number of foreign journals was curtailed proportional to the curtailment of funds provision in this library.

Previously funds were provided to the agricultural universities in Maharashtra as per the average expenditure of last three years and requirements of future years. University libraries were getting ample funds for

Table 7: New Funds Formula

Sr. No	Item	Higher education including library
1.	Salary payment	100%
2.	Contingency (related to the salary and allowances of the staff of that office)	--
2.	2000-2001	15 % of the salary payment
2.2	2001-2002	14 % of the salary payment
2.3	2002-2003	13 % of the salary payment
2.4	2003-2004	12 % of the salary payment
2.5	2004-2005	11 % of the salary payment
2.6	2005-2006 and onwards	10 % of the salary payment

Table 8: Yearly Addition of Theses and Agresco Reports

Sr. No	Name of the Library	Average of Agresco reports of Research Projects submitted during 1995-2000 per year	Average Theses submitted during 1995-2000 per year
1.	Dr.PanjabraoDeshmukh Krishi Vidyapeeth Library, Akola.	20	232
2.	Mahatma Phule Krishi Vidyapeeth Library, Rahuri.	30	165
3.	Marathwada Krishi Vidyapeeth Library, Parbhani.	44	245
4.	Balasaheb Sawant Konkan Krishi Vidyapeeth Library, Dapoli.	19	73
		113	715

purchase of books and journals on an average 20 lakhs per year before the year 1996-1997.

By applying above funds formula the contingency funds provision comes down seriously in the libraries under study.

Contingency funds were utilized for purchase of reading materials. The contingency funds were drastically decreased from the year 1996-97 onwards.

These libraries requires to increase more yearly receipts to maintain the minimum requirement of funds for essential expenditure. The library receipts and library fees collected from the students could be used for misseleaneous expenditure . Now students of all four Universities are paying library fees Rs.200 per semester.

Research

It can be observed from Table 8 that there were more than 113 research projects on different subjects and crops in these universities. Progress reports of researches are

submitted in Annual Joint Agresco meeting. These progress reports are the annual reports of the actual research done in the year. Information from these research reports and research progress reports can be utilized by the other research works at the state, national or international level to strengthen their researches and to avoid duplication of research.

Computer Systems Available

Marathwada Krishi Vidyapeeth Library is having its own server and 10 terminals were attached to the server for internet services. In other three university libraries, library computers were connected to the central server in university computer center. Details about computer systems, softwares available in the libraries under survey are shown in the Table V sat internet connection is available in all libraries under study. Windows operating system is available in

Dr. Panjabrao Deshmukh Krishi Vidyapeeth Library and Mahatma Phule Krishi

Table 9: Computer System and Softwares Available

Sr. No	Name of the Library	Server	Terminals	P.C.	Printers	Software	Internet
1	Dr.Panjabrao Dshmukh Krishi Vidyapeeth Library Akola	--	--	5 Pentium III	01	Windows Operating system	VSAT
2	Mahatma Phule Krishi Vidyapeeth Library, Rahuri.	--	--	2 Pentium II	01	Windows Operating system	VSAT
3	Marathwada Krishi Vidyapeeth Library, Parbhani.	1	10	3 Pentium II	02	Linux + Windows Operating system	VSAT
4	B.S Konkan Krishi Vidyapeeth Library, Dapoli.	--	--	2 Pentium II	02	Linux + Windows Operating system	VSAT

Table 10: Cost of Required Periodicals

Sr. No.	Name of the Library	Subscription Type	Single set sub-subscription	(A) present expenditure	(B) Amount required for four copies	(C) amount required for networking
1	Four Agricultural University Libraries under study	Common Indian Journals	13119	52464	52464	26232
2	PDKV, Library, Akola	Common Indian Journals	8945	8945	35780	17890
3	MPKV, Library, Rahuri.	-do-	24789	24789	99156	49578
4	MKV, Library, Parbhani.	-do-	16115	16115	64460	32230
5	BSKKV, Library, Dapoli.	-do-	7175	7175	28700	14350
6	Three libraries, PDKV, MPKV and BSCKV	Common Indian Journals	133033.68	3991101.04	532134	266067
7	Two libraries under study MPKV and BSCKV	-do-	87414.56	17429	349658	174829
8	Two libraries, PDKV and MPKV	-do-	25308	50616	101232	50616
9	PDKV, Library, Akola	Common Indian Journals	883420.41	883420.41	3533682	1766841
10	MPKV, Library, Rahuri.	-do-	385654	385654	1542616	771308
11	MKV, Library, Parbhani.	-do-	46070	46070	184280	92140
12	BSCKV, Library, Dapoli.	-do-	164405	164405	657620	328810
13	Four Agricultural University Libraries under study	Common Indian Journals	78745	314980	314980	157490
14	MPKV, Library, Rahuri.	CD-ROM database uncommon	6900	69000	276000	138000
15	MKV, Library, Parbhani.	uncommon CD-ROM & online database	1098179	1098179	4392716	2196358
	Total Rs.		3041369.65	3695742.45	12165478	

Vidyapeeth Library, whereas Linux operating system with windows operating system was available in Marathwada Krishi Vidyapeeth Library and B.S. Konkan Krishi vidyapeeth Library.

Resource Sharing

It was found that all the libraries under study were ready for agreement to provide the resource sharing . In study period only Marathwada Krishi Vidyapeeth Library had

signed network services agreement with DELNET, Delhi.

Status Report of Computerised Services

It was found that Computers available in the libraries under study were used for information search through indexing, internet and Email facilities by library users. Computers were not used for circulation, stock verification and acquisition in all libraries under study. Marathwada Krishi Vidyapeeth and Balasaheb Sawant Konkan Krishi Vidyapeeth libraries were using computers for house

Table 11: Summary of the Savings through Networking

Sr. No	Name of the Library	Common/ uncommon journals subscription amount	Subscription of single set	Saving amount (Rs.) (of 2 set)
1	All four Agricultural University Libraries under study	Common Indian Journals	13119	26232
2	Dr. Panjabrao Deshmukh Krishi Vidyapeeth Library, Akola	Common Indian Journals	8945	17890
3	Mahatma Phule Krishi Vidyapeeth Library, Rahuri.	-do-	24789	49578
4	Marathwada Krishi Vidyapeeth Library, Parbhani.	-do-	16115	32230
5	B.S Konkan Krishi Vidyapeeth Library, Dapoli.	-do-	7175	14350
6	Three libraries, PDKV, MPKV and BSKKV	Common foreign Journals	133033.68	266067
7	Two libraries under study MPKV and BSKKV	-do-	87414.56	174829
8	Two libraries, PDKV and MPKV	-do-	25308	50616
9	Dr. Panjabrao Deshmukh Krishi Vidyapeeth Library, Akola	uncommon foreign Journals	883420.41	1766841
10	Mahatma Phule Krishi Vidyapeeth Library, Rahuri.	-do-	385654	771308
11	Marathwada Krishi Vidyapeeth Library, Parbhani.	-do-	46070	92140
12	B.S Konkan Krishi Vidyapeeth Library, Dapoli.	-do-	164405	328810
13	Four Agricultural University Libraries under study	Common subscription of AGRIS	78745	157490
14	Mahatma Phule Krishi Vidyapeeth Library, Rahuri.	Subscription of uncommon CD-ROM database	6900	138000
15	Marathwada Krishi Vidyapeeth Library, Parbhani.	Uncommon online database subscription	1098179	2196358
	Total Rs.		3041369.65	6082739.20

keeping and account works. Mahatma Phule Krishi Vidyapeeth and Marathwada Krishi Vidyapeeth libraries were using computers for cataloguing purpose. Marathwada Krishi Vidyapeeth library is using computers for database creation, serials control, and circulation.

As per the Table 10 cost of present subscription of periodicals and databases in the libraries under study was rupees 3695742. The cost of four sets required for four libraries under study was rupees 12165478.

The additional amount required for four sets subscription will be calculated by deleting the present subscription amount (A) from the four sets required amount (B) for users of the libraries under study. $\text{Rs. } 12165478 - 3695742 = \text{Rs. } 8469736$.

Also the additional amount required for networking will be calculated by deleting A from C i.e. $6082739 - 3695742 = \text{Rs. } 2386997$. The savings will be $\text{Rs. } 8469736 - 2386997 = \text{Rs. } 6082739$.

The profit or savings also will be calculated

Table 12 : Minimum Computer Hardware, Software and Specifications Required at each Node

Sr. No	Item	Specification	Price
1	Intel P-IV	Interl P-IV with 2.7 GHZ clock speed, with main memory of 32 MB and disc space with SCSI HDD suport, 1 GB RAM, CD RW, P-IV PC with multimedia and NW card.	1.80 lakhs
2	Terminals	At least 32 terminals including four P-IV PC with multimedia and NW cards, two colour grphics terminals	3.70 lakhs
3	Provision for connecting upto 128 terminals	Optic fibre connectivity	2.20 lakhs
4	Printers	Two line printers of 1 pm and two letter quality printers, one laser printe and one web camera	3.10 lakhs
5	Communication interface	Preferable through x.25 pad	5000
6	Operating system	Linux	5000.00
7	Software	SLIM	1.90 lakhs
8	UPS/ inverters	2 KVA capacity	80000.00
9	Satellite Communication facility with an earth station and interface to the computer system		7.00 lakhs
10	Two telephone lines exclusively for computer communication		10000.00
11	Separate isolated good earthing to which no other load is to be connected and electrification		1.50 lakhs
12	One scanner		0.05
13	Two modem		0.10
14	Clock speed	800 Mhz	--
15	Storage requirement	20 GB	--
16	Disk I/O	5 M bytes/hr	--
17	Printing load	2000 pages/day	--
18	Communication load	5 M bytes/day	--
19	Fax	3000 k bytes/day	70000

Table 13: Total Amount Required for Networking of the Four Libraries

Sr. No.	Name of the library	Networking amount required
1	Dr.Punjabrao Deshmukh Krishi Vidyapeeth Library	Rs.2485000.00
2	Mahatma Phule Krishi Vidyapeeth Library	Rs.1195000.00
3	Marathwada Krishi Vidyapeeth Library	Rs.1815000.00
4	B.S. Konkan Krishi Vidyapeeth Library	Rs.2445000.00
	TOTAL	Rs.7940000.00

by B-C i.e. Rs. 12165478 - Rs. 6082739 = Rs. 6082739. This amount Rs. 6082739 is the half of the amount required for four sets subscription required for the libraries under study.

The total subscription amount of uncommon databases comes to rupees 1167179-00 as on 31st March 2001. This was

the subscription amount of one set of uncommon databases. As per consideration of double subscription for network, the saving of subscription amount of uncommon databases comes Rs.1167179 x 2 = 2334358 and saving of common AGRIS CD ROM database will be Rs. 78745 x 2 = 157490. The

Table 14: Hardware Configuration at Networking of These Libraries

Sr. No	Computer pad cum switch	Specification
1.	X.25 Pad cum switch	
a.	Function	Navy port should be configurable to synchronous (X.25) on asynchronous
b.	No. of ports	16
c.	Line speed	Upto 64 K bps on synchronous up to 19.2 K bps on asynchronous
d.	No. of virtual	At least 350 circuits
e.	Throughput	80 bps with 128 byte packets
f.	Call set up capacity	20 per second
g.	Frame level	Module 8
h.	Maximum packet size	Up to 512
i.	Protocols supported	X.25, x.3, x.28, x.29 CCITI 198 recommendations.
j.	Power requirements	AC 230 V + 10% at 50 Hz + 2%
k.	Environment	Ambient temperature, 5 to 40 degree C
2.	X.25 Interface card	
a.	Bus compatible	With either at Bus or VME Bus
b.	Logical channels	At least 16
c.	Line speed	Up to 19.2 k bps
d.	Protocols supported	x.25 1984 recommendations x.3 x.28 x.29 server software (1994 recommendations).
3.	Modems	2..
a.	Data format	Asynchronous synchronous (Selectable)
b.	Data rate	28800/14400/9600/2400/1200/300 bps with fall back capacity.
c.	Compatibility	V.22, V.22 bis, V.23, V.21
d.	Interface to DTE	V.24/V.28 (Rs232 C)
e.	Line interface	2 wire dial up (full duplex) and 2 wire leased line (full duplex)
f.	Error control	Built in
g.	Diagnostics	Built in
h.	Dialing capacity	Auto/manual dial auto/manual answer v.25 bis compatibility.

total subscription amount of uncommon and common databases comes Rs. 1167179 + 78745 =1245924.

It can be observed from Table 11 that subscription of single set of common and uncommon periodicals and databases comes cost of rupees 3041369.6 and cost of network version comes rupees 304139.6 x 2 = Rs.6082739. Saving of two sets of periodicals through networking comes Rs. 6082739.

Arunachalam and Umarani (1998) said that the analysis of publications in CAB abstract shows contributions from Indian in agricultural research.

Maharashtra state is the 4th in state wise ranking in India with 851 papers in the year 1998. CAB abstract database cover 80% published research on agricultural and related subjects.

As shown in the Table 11 saving of subscription amount through network version subscription of periodicals and databases will be rupees 6082739 for one year.

Costing of the Project

The funds required for networking of these libraries may be raised from the saving subscription amount of common and uncommon sources of information through networking facilities like, current content service, document delivery service, e-journals, full text online databases subscription and becoming member of different networking online data bases. The offline databases can also be shared to each other for saving of amount of subscription by agreement between these libraries.

Total amount for networking of the libraries under study comes Rs. 7940000. Miscellaneous items of Rs. 1 lakh may be required to each library under study for networking. Therefore total amount required for networking of the libraries under study comes Rs. 8340000.00

Suggested Network Hardware configuration at each node in the network system is as under.

The above specifications are to be included in configuration of computer equipment required for networking of the libraries under study. The networking cost of these libraries under study comes to Rs. 8340000 and saving by network subscription comes rupees 6082739. The cost of the networking will be met within two years by saving amount of network subscription of the libraries under study and network will be feasible.

Presently Indian Council of Agricultural Research is providing online journals on consortium basis, cera.jccc.in site with IP base search provision to all state agricultural university libraries in India. The full text journals included in cera.jccc.in are more than 2000. Free journals site open j-gate provides more than 4000 journals online in full text from informatics Indian Ltd. Bangalore. All four agricultural university libraries under study are getting online journals as above to their library users. i.e. partially networking for journals subscription is already done through above online databases. Also these libraries can share their sources of information through online digital library services and network services.

Conclusions

Majority of the foreign and Indian journals available in these libraries were found uncommon. These uncommon journals and serial publications could be provided to each other by networking through online digital library services by networking these libraries. Four copies of common foreign journals may be reduced to single copy by agreement between these libraries and resource sharing

and networking these libraries. The saving of the subscriptions amount of foreign and Indian periodicals will be rupees 2715140 and saving of databases subscription will be rupees 2491848 i.e. total subscription saving comes to around rupees 52.06.988. Cost of networking is 98 lakhs.

There were some special areas of collection development in these libraries. It was some special areas of collection development in these libraries. It was found that there was one different single subject for post graduate level inside the university campus and collection of that subject was more than other University libraries e.g. forestry subject in Dr. Punjabrao Deshmukh Krishi Vidyapeeth Library, irrigation and water management in Mahatma Phule Krishi Vidyapeeth Library, food technology and food science and nutrition in Marathwada Krishi Vidyapeeth Library and fishery in B.S. Konkan Krishi Vidyapeeth Library, Dapoli were the special post graduate courses identified. The collection on these subjects were found more than other libraries under study.

It was proposed to prepare a full text database on Agresco Reports and theses submitted in these universities under study. This was the original research done in these universities and other researchers required to know about it. This database could earn money or make receipt for development of library network in the libraries under study.

The yearly database subscription amount could be collected from other libraries in Indian and worldwide libraries. It was proposed to collect the CDs with the theses and agresco reports submitted and prepare a full text database to provides this original information to the researchers in the world.

Indian Council of Agricultural Research, New Delhi has already provided V sat Internet connection to these universities and these universities has provided internet acces to the library users. ICAR has also provided one multimedia personal computer Pentium-II, one UPS, MS office and one heavy duty printer to the agricultural university libraries as per their requirement for provision of internet services

to the library users.

The researcher has identified core collection, common and uncommon periodicals, special areas covered by each library. Further, the requirements in respect of hardware, software and for infrastructure are considered. Based on this information networking of the journals subscription through consortium is essential. It is found that the cost of the network can be met within two years in the form of savings achieved through resource sharing.

Networking of the libraries under study was found essential immediately. The networking of these libraries was recommended to strengthen the information networking services. Now library and information services of the libraries under study may share their sources of information through online digital library services.

Administration of Network

Consortium approach would be ideal for governing and operating the network. It is proposed that a society will be formed and registered with all the four participating libraries as members and the nominees of these libraries would function as a governing council to look after the administrative aspects of the network. The council comprises of members/nominees of all the participating libraries. The governing council could be headed by the librarians of four agricultural university libraries alternately. The consortium can be formed as a society, under the society registration act, as a nonprofit organization.

The overall management and administration of this network will in the Board of Government and the Secretary or executive will be attending to the day to day operations and will be reporting to the Board.

References

1. Busha CH and Harter SP. Research methods in librarianship, techniques and interpretation. 1980: 151-153.
2. Dominic CJ. Measuring the collection development of Karunya Institute of Technology Library : A case study. 2000; 22(1): 15-25.
3. Evans GE. Developing library and information center collections 2nd. Clorado libraries; 1987: 13.
4. <http://www.icar.org.in/natp.html> ICAR-INFLIBNET training programme for Agricultural Librarians on networking and e-resource management. 4-17th Aug., 2003, 1-5.
5. Indian Council of Agricultural Research: Annual Report. 2001-2002: 1-10.
6. Indian Council of Agricultural Research: Indo-American Agricultural Library Survey Team: Final Report by Dorothy Parker, New Delhi: 1969; 49-60.
7. Indian Council of Agricultural Research: ni.in/icar, 30th Dec. 2001.
8. Maharashtra Council of Agricultural Education and Research Prospectus, Pune-2001-2002.
9. Mayee CD. Perspective plan (2000-2005) State Agricultural University of Maharashtra, 1998, Preface.
10. Perumalsamy K and Karunanithi. Modernisation of Agricultural University Libraries. *University News*. 2002; 40(5): 8-12.
11. Sujatha G. Resource sharing and Networking of University libraries, ESSESS, New Delhi: 2000; 24-31.
12. Vashishtha CP. International information system for agricultural sciences and technology (AGRIS). *Lucknow Librarian*. 1981; 13(2): 71-80.