KAU ON THE SPRINGBOARD TO CYBERSPACE

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Agriculture forms the backbone of our economy and despite concentrated industrialisation it is the source of livelihood for over seventy percent of our population. Agricultural research develops technologies that can increase food production and agricultural information systems access, store and disseminate the knowledge generated by research to the extension worker and also to the farming community. As a consequence of rapid developments taking place in science and technology, there is a virtual information explosion the world over. For achieving an optimal utilization of these developments it is essential that the agricultural scientist have a quick access to information at local, national and international levels. The Global Village, Shrinking World, Digital Revolution etc are some of the terms being used to describe the possibilities of information technology. In the fast developing world, time is a crucial factor and availability of timely information is necessary to provide cutting edge to the success of any research programme. Fortunately with the phenomenal development in computer and communication technology along with their application in library systems we are in a position to accomp-lish the task of the information management so that the information is both integrated, and disseminated and shared. Efficient library and information systems are very crucial for research and development.

KAU was established in 1972. There is clear provision in KAU Act of 1971 and statutes itself for a centrally coordinated library and information system. But till recently libraries in eight constituent colleges, five regional agricultural research stations and 23 sub stations functioned as independent units.

Recently KAU has obtained support from various national and international agencies and started the work for development of an integrated library and information system which can pool and share the resources available at various centres as well as extend access to the total resources to all KAU stations and also the public.

Library and Information Network

The integrated library and information system KAU has established consist the Central Library with a Building LAN connected to the main campus network and automated libraries in distant campuses of the university connected to concerned campus networks. These campus LANs will be interconnected to form a Wide Area Network which will be linked to the outside world using satellite technology. KAU has already got a 64 kbps VSAT for main campus and another VSAT is available for Nilesvaram campus. This will give to these campus networks strong communication capabilities to access information from various sources. All Research Station will have minimum computer facilities which can be connected to the Public Service Telephone Network (PSTN) through dial-up modems and through that to the college libraries or the Central Library.

Central Library Building

KAU has decided in 1992 to establish a central library to develop the system on modern lines. University created a high level committee in 1992 which visited number of

major libraries in India and gathered useful information for the planning and development of the Central Library. On the basis of study made by the high level committee a detailed proposal for the central library building was forwarded to the CPWD. Mr. Koragaonker one of the eminent architects of India prepared the concept design for the university library building.

The Central Library located in the most prominent site in the main campus at Vellanikkara in Trichur has a unique building of Kerala's traditional design which can utilise natural air and ventilation to the maximum hours of the day. It faces a serene and beautiful landscape and provides comfortable and peaceful environment for the seekers of knowledge. The physical facilities provided are of international standard. The four storey building has a total plinth area of 4000 sq.mt. The furniture and equipments provided in the library are of international standards and are designed with a view to accommodate the developments in current information technology. As per the opinion of experts the physical facilities can remain functional and modern for at least next two decades.

A Building LAN of the central library has already been completed. Through this in the initial phase thirty five users can at the same time access textual and multimedia information stored in the electronic libraries of KAU and also from databases of outside sources. Being a plug and play type of LAN this facility can be increased to accommodate 65 users by adding required terminals. They can read the text or see the video on their topic or hear the talk by experts. Through the campus network to be established at main campus under ARIS programme any staff member in the colleges in the main campus can access library from the terminal in their table. Even plans are there for providing terminals at students hostels for day and night online access to the library. Library databases can be accessed online from distant college campuses also. Central Library will also co-ordinate the linkages and co-operate with external sources of information like IARI Library. It will have the responsibility to exchange online information to college campus networks and research stations to meet their specific requirements.

DISC From Dept of Biotechnology

Department of Biotechnology, Government of India supported KAU in 1995 by providing a Distributed Informatiion Centre (DISC)under Biotechnology Information System (BTIS) for harnessing the scientific knowledge in various interdisciplinary areas of biotechnology and its dissemination to scientists. It comprises specialised information centres on; genetic engineering, animal cell culture and virology, plant tissue culture, photosynthesis, and plant molecular biology, oncogenes, reproduction physiology, cell transformation, nucleic acid and protein sequences, immunology, enzyme engineering, immobilised biocatalysts, microbial fermentation and bio process engineering which can be accessed online from KAU. DISC has already started functioning in KAU.

MOU with INFLIBNET

KAU has also signed in 1995 an MOU with Information and Library Network Programme (INFLIBNET) under Govt of India which has its central hub at Ahemedabad. It connects universities and research and development institutions of national importance using a hybrid version of communication architecture using satellite and terrestrial networking. As per the MOU; INFLIBNET will be providing technical advice for standardisation of services. INFLIBNET has already provided system configuration, specification and technical assistance and software standards for automating KAU Library and Information System.

ARIS Programme

The support for Campus networks was obtained in 1996 through ICAR under its Agricultural Research Information System (ARIS) programme which was financed by World Bank. Collaboration among scientists in India, systematic access to research information available in India as well as in other countries, better project management of agricultural research and modernization of the office automation tools used by the scientists and administrators are the major goals of ARIS programme. It envisages point to point connectivity to all state agricultural universities, research institutions under ICAR, project directorates, national research centres and zonal research stations through a national network. ARIS consists information modules, Agricultural Management Information System (ARMIS), Agricultural Research Personnel Information System (ARPIS), Agricultural Research Financial Information System (ARFIS), and Agricultural Research Library and Information System (ARLIS).

CGIAR Support

Consultative Group on International Agricultural Research (CGIAR) is an informal association of 48 public and private sector members that supports a network of 16 international agricultural research centres. One of those centres, ICRISAT, is located in Hyderabad in India. The mission of CGIAR is to contribute through research to promoting sustainable agriculture for security in developing countries. CGIAR has developed the largest full text electronic library on agriculture and biosciences. In 1996 KAU had received an electronic version of this huge collection for its library system. It gives practical problem solving research in key areas like productivity, management of natural resources, improving policy environment, institution building, germ plasm conservation and building linkages in agricultural system. This electronic library contains all the publications originally brought out by 19 international agricultural research centres including ICRISAT of India. It contains in full results of 24 years agricultural research recorded in documents including key books, serials, conference proceedings, reports, maps, graphs and photographs produced by research centres worldwide. In print the items will cost more than Rs. 60 lakhs.

Tie up With IDRC

International Development Research Centre, (IDRC) Ottawa has developed an electronic library containing information on development research going on all over the world supported by World Bank, FAO and other international organizations. IDRC has given this database to KAU library and agreed to update it continuously under a resource sharing programme.

NIC Facilities

The National Informatics Centre (NIC)Network under Planning Commission connects approximately 750 earth stations with links to all district headquarters and a number of public sector undertakings. Some of the important management information systems implemented by NICNET in agricultural sector are; agricultural census, agricultural input survey, agricultural commodity, price movement and market arrival monitoring, crop statistics, seed management, fertiliser production and consumption, irrigation water deliveries, monitoring of reservoir levels,

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program monitoring for rural development, land records system, management of food economy, wheat and rice procurement, food grain stock and price, sugar information, public distribution etc. From 1995 NIC has started to provide communication links to KAU under various schemes for access to NIC information systems.

ERNET Connectivity

Educational and research Network implemented by DOE with UNDP support has over four hundred organizations connected to it within India and also neighbouring countries. They include many agricultural research institutes, universities, organizations and specialised information systems at national and international level. In February 1997 DOE has agreed to provide ERNET connection to KAU also for accessing databases of institutions participating in its resource sharing programme.

CAB Services

Centre for Agriculture and Biosciences International is an intergovernmental organization. It maintains an electronic database covering subjects like agricultural engineering, animal breeding, animal diseases, arid lands, diary sciences, forestry, forest products, horticulture, nutrition, veterinary science, entomology, plant breeding, plant pathology, soils and fertilizers, weeds and world agricultural economics. The database contains information including abstracts of papers published in 8500 journal on the concerned topics in 37 different languages, and also books, reports, thesis, conference proceedings, patents, annual reports and guides. The coverage is from 1972. Over 1, 60 000 items will be included in the database every year. The CAB database on agriculture and allied subjects covering the period from 1973 to present consisting of 3,000,000 records is already available at the Electronic Library Division of KAU and will be an asset to the state's agricultural research and development programmes.

Objectives of KAU Information System

The process of agricultural research is becoming more and more complex and the function has come to be keenly dependent on efficient library and information services. Hence a modern library system has become essential and urgent for KAU to ensure the quality of research and also avoid waste of resources due to duplication of research. The integrated library and information system implemented in KAU can in addition to KAUs' need give necessary leadership for sharing the agricultural information in the state. The integrated library and system of KAU can meet the following needs.

* Provide a Library and Information Service Network consisting of the libraries in the main campus, colleges, research stations, and also the information Systems available to the University.
* Build up information resources, prepare computerised data bases on agricultural sciences and to develop relevant information handling tools and techniques.
* Evolve standards and guidelines for library and information systems and networks.
* Co-ordinate efforts to access information on agricultural sciences world wide including establishment of linkages with national and international agricultural libraries.
* Provide information retrieval services either online or offline in all areas of Agricultural Sciences and to give overall information support in all field of knowledge.
* Implement user education programmes for scientists and students on subjects

like information sources, literature search, indexing and abstracting procedures, computerised information retrieval, etc. and provide in service training for librarians.

Benefits of Integrated System

In the integrated system, the Computer and communication equipments received by KAU under various schemes can be installed in constituent colleges or stations at different regions of the state on a set plan to form the WAN and make extension of services to all a reality. High reliability at less cost and manpower will become possible.

Bringing all libraries and information systems of the university and their equipments together as an integrated system and extending their use through KAU's own network as done at present is an inevitable necessity to enable agricultural scientists and researchers to have access to all information generated by agricultural research institutes world wide. This can enable KAU to extend the services to other research institutes, government and the people especially the villagers and farmers which is to be considered the very important duty of KAU.

Application of Information Technology

In addition to traditional divisions which also will be automated KAU Library and Information System will have various IT divisions for providing services using current information technology..

Multimedia Division

Already KAU had acquired minimum facilities for this division. Placed in the perspective of CD-ROM and other variants this division will provide to KAU the ability to meet relatively large storage requirement of information in various media as well as provide a vehicle for the distribution purposes. Unlike books, videos and other non interactive media, multimedia technology can provide users with a choice of numerous meaningful paths. Paths can be defined choosing options that pertain to a current activity. For example select information on natural resources; and expect to be presented with options such as energy, water, land, animal, plant and media options like video, audio, text and so forth. interact-ions of this sort permits users to view incidents, hear speech of expert, read text matter or print relevant pages in seconds.

User Orientation

The Executive Committee of KAU has decided to start a Centre for Library and Information Science to demystify the digital world to students and researchers. The Central library has a lecture hall and the facilities required for offering such programmes including continuous user orientation which is essential to remove the psychological barriers in using a high tech information system. New users can attend introductory group sessions which will be conducted regularly at the University Library or can contact library staff who will explain how to get the most benefit from the resources available. These library staff who provide readers advice will be staff with specialist subject knowledge who work with individuals and departments to develop skills in identifying and processing relevant information.

Farmers Division

Already university had collected a large number of reading materials video tapes and interactive multimedia programmes specially prepared for villagers and farmers. This division also will have video programmes and interactive multimedia databases on sustainable farming methods, animal rearing etc specially produced for them. There will also be an exhibition facility for displaying posters, books and other materials on special occasions like environment day and wild life week

Database Division

KAU will be developing at Central Library bibliographical and full text location specific data bases on agricultural and related technologies. Creation of a bibliographical database of the document collections held by the university at its constituent colleges and stations is in progress. University can share these databases with other institutions so that the university will have a position of repute among all resource sharing information systems. Some other databases like Academic Database, Scientists Database etc have been already been created which will be continuously updated.

Services Offered

Books for loan, Reference and information services, Periodicals and newspapers, Photocopying of materials held in libraries, Access to microform collection, Career information, Access to CD-ROM databases in the libraries, International photocopying service, International lending service, Online bibliographic search service, Current awareness bulletins, Selective Dissemination of Information, Inhouse video service.

Humanware

Human beings are the most important components of a system. The first and most important requirements for the effective functioning of any library and information system is the availability of qualified and experienced staff. The university has recruited few professionals with proved record of innovation and achievement in Information Technology field which forms the cream of specialised human resource available in the state for the operation of such a high tech system

Sustainable Development

KAU has to play a vital role in agricultural sector by preparing human resources of teachers, researchers and extension workers. Library and Information support that the university has to offer is a very important ingredient which determines the quality of human resources as well as relevance and efficiency of all programmes for agricultural development. Information technology has provided new techniques and equipments that can break the barriers of time and space in collecting, storing and disseminating information. KAU cannot afford to lag behind in this technology. Our resources are limited and hence it is only proper to pool and share information systems and equipments to enable an integrated library and information system at KAU for the use of the agicultural sector of the state so that we do not starve for information which is vital for development. The integrated library and information system envisaged and implimented at KAU can enable effective utilisation of the support for development of such systems and services, extended by ICAR, State Government and other national and international agencies.

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