Role of Agricultural Libraries in Digital Environment

M. Trinath[1] and B. Niranjan[2]

Abstract

Indian Council of Agricultural Research (ICAR) encourages e-Learning to promote the use of e-Resource in the Agriculture Sector. The financial aid provided by the Indian Council of Agricultural Research (ICAR) is a good initiative for strengthening and developing Agricultural Libraries. Agricultural Libraries play a vital role in disseminating information and knowledge to researchers, extension workers and farmers to increase crop productivity and self-sufficiency in the agriculture sector. In the Digital Age, the advances digital technologies offer immense opportunities for Agricultural Libraries to expand their networking and services to reach out to their targeted group effectively. This paper examines the different initiatives made by ICAR and other organizations and suggests recommendations to strengthen Agricultural Libraries in the digital environment.

Keywords: Agricultural Library, Digital Library, CeRA, Krishikosh, IDEAL

Introduction

The Agricultural Library and Information Centers in Agricultural Universities and Research Institutions are important learning centers which provides Agricultural Information to people engaged in the Agricultural Sector. They play a vital role in the transmission of agricultural technologies and knowledge to farmers, scientists, extension workers, administrators and many others who involve in agricultural development. In the digital era, the Agricultural Libraries have transformed into Digital Libraries and Online Libraries to provide information services to different stakeholders efficiently. These modern libraries with the power of advances in ICTs

[1&2] Librarians, Aditya Educational Institutions, Surampalem, Kakinada, Andhra Pradesh.

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adopted innovative methods digitized the rich agricultural information and knowledge for easy access and use by all. The Agricultural Libraries have added several e-resources in the form of e-books, online journals, online databases, institutional repositories etc.

Objectives

This paper states the role of Agricultural Libraries in Digital Era and explains the initiative of ICAR for strengthening of Agricultural Libraries in the country. It also discusses the major constraints for Agricultural Libraries and Librarians Professionals in the digital era.

Agricultural Libraries in India

Indian Council of Agricultural Research - ICAR is an extensive network for agricultural education, research, and extension in agriculture and allied subjects. In this network more than 200 libraries exists under the ICAR umbrella. These included 4 Deemed University Libraries declared as National Libraries, 3 Central University Libraries, 64 State Agricultural, Horticulture and Veterinary University Libraries, 65 Central Institute Libraries, 14 National Research Center Libraries. More than 200 college libraries in agriculture, horticulture, agricultural engineering, veterinary and animal husbandry, fisheries are also providing library services in-country.

Important Services of Agricultural Libraries

1. Loan Privilege: Books, References, Periodicals, Thesis, Reports and reading materials.
2. Documentation Services Abstracting Services, Indexing Services, Bibliography Services, Translation Services, Reprint Photocopy services, etc.,
3. Current Awareness Services (CAS) and Selective Dissemination Information (SDI) Services

4. Internet Surfing:
   a) Web Surfing for study Purpose
   b) For Research
   c) For Recreation
5. E-Services
   a) E-Journals through CeRA
   b) Through Open Access sites
   c) Though subscribed resources e-Books, e-Resources e-Journals, online journals Database Access, Elsevier, CABI
6. Web OPAC: Networked OPAC Show Everywhere
7. Library Services 24X7 and available on Mobile Apps, Email alerts, New Arrivals
8. Circulation check anywhere- RFID
9. Krishikosh Repository
10. In-house Local Repository
11. Video Conferencing, Wi-Fi Facility
12. Resource Sharing, Data sharing, Information sharing through network
13. Internet-Based Library Information Services
14. Guidance and Counselling, Awareness and Orientation/ Training Programs.
15. Competitive Corner

Agricultural Libraries in Digital Era

In the Digital era, Libraries and Information Centers are known as Digital Libraries, Online Libraries, Virtual Libraries etc. In these digital libraries, the agricultural knowledge, study materials and information resources mostly available as digital or e-content and made available and accessible

through websites, portals or institutional repositories. Since the information is digitized and available through online mode, the agricultural libraries have increased their access to users anywhere.

Agricultural Libraries also play a prominent role in disseminating information through their services, i.e., loan privilege, e-resources, e-services etc. Online service like Krishikosh, an institutional repository is an excellent example of collection development and e-resource sharing in the digital agricultural libraries. The establishment of library consortia is also observed as an important development in maximising the sharing of digital resources among agricultural libraries. Internet and IP-based networked technology play a significant role in accessing online databases, e-journals and other digital contents. Similarly, cloud computing and remote access software plays a tremendous role in providing library services in remote areas.

Role of Agricultural Libraries

Agricultural libraries play an essential role in education, research, and extension activities. They provide the following services to agricultural faculty, researchers, extension professionals and farmers:

1. The agricultural library's prominent role is to increase the use of agricultural information resources in teaching, research, and extension services.
2. Support to improve the quality of education, research, and extension services of the agricultural institutions.
3. Current Awareness Service (CAS) and Selective Dissemination of Information (SDI) services in hard and soft copy form to agricultural scientists, research workers, professors, students, farmers, and those involved in the agriculture sector.
4. Cooperation with other agricultural institutions to use the information resources.

5. Awareness programs, exhibitions, displays of the latest agricultural research, varieties related publications for farmers in rural areas.

The Changing Role of Agricultural Libraries in Digital Environment

1. Agricultural Libraries should provide information resources for their users and allow implement IT tools and techniques for seamless access to information creating a learning environment.
2. Agricultural libraries should create a networked-based digital environment for sharing resources from institutions for teaching and learning process.
3. Agricultural libraries should provide access to e-resources such as e-books, online journals, electronic databases, and software by a community of users.
4. Agricultural librarians should provide reference services questions, provide access to audio-video books, and teach users how to use e-resources.
5. Agricultural libraries should provide selective dissemination of information to students, faculty, and agricultural workers through electronic or online means.
6. Agricultural library professionals should act as instructors to guide users on use of new technologies and techniques to access different types of digital information
7. Agricultural libraries should preserve and organize agricultural research, ideas, knowledge resources, experiences for the future in digital format
8. Agricultural libraries should focus on building information databases on agriculture techniques, innovations, methods, experiments, practices, cultivation, and new research in order to provide learning opportunities to agriculture workers for global and local levels.

9. Agricultural libraries should ensure accessibility to their digital information resources to the users who operate from classroom, lab and field. They need to create facilities like video conferencing, virtual classroom, online classroom etc., to organise face-to-face meetings with resource persons and farmers

10. Agricultural libraries should take leadership in promoting the concept of resource sharing, inter-library collaboration and consortium initiative

ICAR Initiatives for Strengthening Agricultural Libraries

The Indian Council of Agricultural Research (ICAR) is an autonomous apex body responsible for co-coordinating agricultural education, research, and extension in India. Indian Council of Agricultural Research also supports agricultural education and research and extension activities. Under agricultural education for strengthening and developing agricultural libraries,

The ICAR has contributed a lot toward strengthening and modernizing agricultural libraries via modern Information Technological (IT) tools. ICAR had sanctioned network project 'Library Information System Project' under the National Agricultural Technology Project for effective execution of the project for developing better human resources. In this regard, the National Agriculture Innovation Project (NAIP) is also launched to develop this sector. ICAR launched Consortium for e-Resources in Agriculture in (CeRA) and e-Granth for an agricultural community under NAIP. The main objective of this consortia is to bring together several libraries in the group to develop the existing research and development information resource base of ICAR institutes/universities etc. Comparable to that existing in the world's leading institutions/organizations and to subscribe to e-journals and certain and e-access culture among scientists/teachers and students in ICAR institutes and agricultural universities. Important initiatives by ICAR are given below:

eGranth

eGranth is a subproject of the National Agricultural Innovation Project (NAIP) of the Indian Council of Agricultural Research (ICAR). Under the umbrella of ICAR, Indian Agricultural Research Institute (IARI) continues to be the leading institution for agricultural research, education, and extension in the country. The project aims to provide digital access to research institutes and agricultural universities' library resources, including OPAC, important institutional repository, rare books and periodicals, old journals, and make them publicly accessible over the internet under NARS with Online Computer Library Enter (OCLC) partnership. KOHA is selected as the standard software for this purpose.

Integrated Digital Ensemble of Agricultural Libraries (IDEAL)

http://ideal.egranth.ac.in/

IDEAL is a platform for Agricultural Libraries of Indian National Agricultural Research & Education System (NARES), enabling them to adopt an Integrated Library Management System for their operations of all their library functions. It is a software platform built on the 'Software as a Service (SaaS) concept to provide a hassle-free, ready to use, international standards-based platform for sharing library holdings through a union catalog (AgriCat). An integrated digital library delivered at the desk of researchers, faculty, and students of NARES can boost the quality of research output and save time. A robust set of servers and failover servers operational at the data center of ICAR-Indian Agricultural Research Institute (IARI), Pusa, New Delhi, provide hosting facilities for customized Koha open source software running independent instances for each library. Any library under NARES willing to be part of IDEAL needs to bring their catalogue data to a standard format and learn how to use Koha ILMS for library functioning.

Consortium for e-Resources in Agriculture (CeRA):

https://jgateplus.com/search/login/

Consortium for e-Resources in Agriculture is an online consortium known as CeRA. Its mandate is providing online accessibility of all essential journals related to agriculture and its allied field to researchers and students of the Consortium members. Improvement in the quality of scientific publications, teaching, and research. The main objective is to upscale the existing R & D information resource base of ICAR Institutions/Universities comparable to the world's leading institutions/organizations, subscribe to e-journals, and create an e-access culture among scientists/ faculty in ICAR Institutes/ Agricultural Universities. Presently CeRA provides 24 x 7 online accessibility of 3300 + scientific journals and 1174 e-books to 152 NARES Institutes and State Agricultural Universities through IP authentication. In CeRA, Specific articles, not accessible through CeRA, made available through Document Delivery Request (DDR) System to members. This consortium also provides remote Access Facility to select Institutes for accessing CeRA off Campus.

E-Courses Krishi Siksha

http://ecourses.iasri.res.in/Home1.aspx

Under ICAR support, all the e-Course contents available on this website have been developed by subject matter specialists of the respective disciplines at State Agricultural Universities in India and Deemed Universities of ICAR. The course material is prepared as per ICAR approved syllabus for undergraduate students already enrolled in Indian Agricultural Universities.

IndiaAgristat

https://www.indiaagristat.com/

Provide Indian agricultural statistics i.e., Area/Land Use Agricultural Education Agricultural Export Agricultural Implements and Machinery Agricultural Imports Agricultural etc. https://www.indiaagristat.com/

Indian Agriculture Research Journal

http://epubs.icar.org.in/ejournal/

ICAR provides more than forty online Indian agricultural research journals for its users.

Suggestions for Improvement

Agricultural Libraries should promote and help in agricultural education, training, extension, and research activities. Libraries should be working as an advanced learning center.

- Emphasis should be given to the promotion of networked-based communication and dissemination.
- Concentration should be given on global information sharing.
- Need concentration on evolving effective information sharing mechanisms.
- Emphasis should be given on the Networking of Agricultural Libraries.
- Coordination should be created for sharing agricultural information in various ICAR institutes and agricultural Universities.
- Importance should be given to library computerization and automation should work in all the in-house operations of the library.
- Need uniformity in using automation software. Programming language should be platform-independent. Common Library Management Software should be implemented in all the agricultural libraries.
- Library services should be accessed all the time (24X7) for users, need increase satellite linkage of agricultural libraries.
- Needed high bandwidth connectivity for high speed internet to improve access to information resources.

- Agricultural library should increase access to digital literacy, increase e-resources, digital and online resources, digital content, online content, course materials.
- Implement cloud computing for storing data for future development.
- The agricultural library should organize user awareness orientation programs, lecture series related to library and technical services.
- Regular awareness and training should be essential for library staff of agricultural libraries.
- Learning materials like books, journals, databases, and other relevant information sources should be digitized and made them readily available for use with the help of IT tools in digital platforms.
- Agricultural libraries should provide online Current Awareness Service, Database Service, Indexing and Abstracting, Reprographic Service, Selective Dissemination of Information, Technical Enquiry Service, and Union Catalogue of Periodic Resources.
- Agricultural libraries should introduce the use of electronic resources and e-services i.e., web services, e-mail, internet browsing, database and multimedia, new arrivals, etc.
- Agricultural library should also provide translation services, translation of resources in local language for transforming library services
- A mobile app for library services should be developed. These apps will be highly beneficial to the user for accessing library resources like Krishikosh apps, Library apps and eBooks apps.
- Promotion should be given for mobile applications and QR Code.
- Emphasis should be given for use of learning tools in library services like computers, mobiles, kindle, laptops and e-book readers..
- Agricultural library should promote use of remote access software for providing access to rural and remote areas. Latest software and

hardware systems should be established for remote access to libraries resource in rural areas.

- Emphasis should be given to initiatives that promote collaboration, networking, consortium and resource sharing among agricultural libraries.
- Agricultural libraries should concentrate on Massive Open Online Courses: (MOOCs) for free online courses.
- Preference should be given for integrating agricultural apps for weather, disease prevention, and agronomical practices for farmers like crop doctors in library services.
- The library professionals in the digital libraries should have required skills on managing and operating latest ICT tools and techniques. They should have good working knowledge on accessing information through online databases, e-journals and knowledge portals. They should have good communication skills to orient and train the users.

Challenges

Besides several advantages, agricultural libraries in the digital environment face different challenges related to collection development, capacity of library professionals and financial support. Some of the important challenges are given below:

- Privacy, security and copyright issues related digital content in the libraries
- Lack of required bandwidth to get high-speed internet connectivity.
- Inadequate capacities of library professions on the use of new ICTs and software applications in libraries
- Most of the website of libraries are not updated with latest information.
- Many library need to harvest the power of social media platforms like Facebook and Twitter to disseminate information directly to the users
- Meagre financial support to procure e-resources in the libraries

Conclusion

The role of agricultural libraries and information centers and the library professionals associated has been gaining importance in agricultural development. The advances in ICTs and software applications further empowered agricultural libraries to be able to provide relevant information to the doorsteps of farmers, scientists and extension workers through a variety of online information services, websites, databases, information repositories etc. However, the agricultural libraries need to initiate efforts to digitize content, integrate their services with the on-going efforts of the Governments or ICAR like library consortia and networking to share information resources optimally. There is a need also to build capacities of library and information professionals to manage digital agricultural libraries and reach out users through innovative approaches.

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