ICT Tools for Building Agricultural Knowledge and Information Systems

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Abstract

In India, the Agriculture sector plays a crucial role in our country's economic and social development; about 60% of our population is engaged in agriculture directly or indirectly. E-agriculture library should be developed which is attached to a higher education institution. The Agriculture libraries must focus on collection development since comprehensive collections are not feasible. ICTs help agriculture libraries connect with specific networks and information sources. Agriculture libraries typically provide access to subscription-based online resources, including research databases and ebook collections, in addition to physical books and journals. ICT plays a crucial role in developing library building, library book collection, user data, book acquisition, delivery of information, information exchange service, current awareness service and selective dissemination of information, reference service at lower cost, faster and up-to-date information to the end-user.

Keywords: ICT, Agricultural Library, Agriculture Research Information System, Agricultural Knowledge Management.

Introduction

India is called the farmers' land as most people are directly and indirectly involved in agriculture. Farming is the process of growing a wide variety of crops. India has a diverse culture with approx many languages. In India, farmers refer to people actively engaged in economic and livelihood activities. Its arable land is about 159.7 million hectares, the second-largest area-covered country globally and irrigated crop area.

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Received Date: 25.01.2022 Accepted Date: 09.02.2022

Agriculture libraries provide resources and services to support the farmers by providing or sharing all kinds of agriculture information. It includes upcoming trends, crops cost, and suitability for farming which helps the farmers to give the best practices. ICTs play an important role in processing the real-time information like weather data and market information and disscreminate it to farmers.

Definition of Information Communication Technology (ICT)

The word Information and Communication Technology (ICT) is first used in IT Sector. Whilst Information Technology (IT) was used in World War II for information sharing. The universal term, ICT, deals with using electronic computers and computer software to convert, store, protect, process, transmit, and retrieve information. ICT combines infrastructure and software components to interact with a modern computing system.

Requirement of Information Technology

Because of the information explosion, it is challenging to handle information with the traditional library tools like manual catalogs, bibliographies, etc. In today's digital environment where all users use multimedia phone and access online information. ICT has become a necessity for agricultural libraries for improved services.

Impact of Information Communication Technology on the Agricultural Libraries

ICT has changed agricultural productivity and strengthened the agriculture sector by providing timely and updated information on agriculture-related emerging threats in crops. Weather information or forecasting crop prices in different local areas and global markets. In this way the farmer can get desired information and services effectively in the shortest time. Information technology is growing faster and more secure with the advanced security feature implemented in the network.

The continuous increase in global population and food market integration has intensified the agriculture sector's competition and efficiency. It has brought unique opportunities to include more smallholders into supply chains so that the market demand and supply would fulfill society. The application of ICT transformed the collection, storage, and retrieval of data from source to destination in agriculture libraries. It is needed to speed up accurate and reliable data transfer in the future. In the early days, the danger of non-availability of hard copies of the document is common, but now it is available only on CD-ROM, hard disk and cloud storage. Many international databases like DIALOG, MEDLARS, INIS, AGRIS, etc., deliver the information electronically. Unless the libraries are automated, there is no possibility of accessing the information from these global-level databases. The versatility of an ICT-driven agriculture library that would adequately and efficiently meet the information need of patrons has been widely acknowledged.

ICTs for Agriculture

Many agriculture libraries provide digital data to their users to satisfy their needs in a specific period by searching for information in digital format with help of new ICTs, including computers, Internet, Intranet and other technologies. Now users can place their online demand for the information by mailing or messaging the librarian. Now the user and subscriber also place their information on a global platform. They require access to the latest information, updated information resources, and access to ICT facilities that they could use in their work.

Today, ICT in agriculture will be the need of management to satisfy users. It has many benefits to farmers and other stakeholders. Some of the benefits are:

- Faster and provide easy access to information or data.
- Give remote user access.

- Increasing efficiency, productivity, and sustainability of small-scale farms.
- Information about pest and disease control.
- Early warning system for the new varieties to the user.
- The new way to optimize production and regulation.
- Better markets result from an informed decision about future crops and commodities and the best time and places to sell and buy goods.
- Up to date market information on prices for commodities inputs and consumer trends.
- Reduce soil erosion.
- Open up new business opportunities and allow more accessible contact with friends and relatives.
- Works round-the-clock access to users.
- Give access to unlimited information from different sources and places
- Information flexibility to be used by any user.
- Provides increased flexibility
- Change the information, reformatting and combine data from different network sources.
- Secure access.
- Low economic costs to access some information.

ICTs in Agricultural Library

- ICT helps the users to assemble the information in different stores so that it cannot be lost or removed and kept for a more extended period.
- Users work easier, faster, cheaper, and more effective way.
- It helps to manage information of different subjects, and information overload is removed by the computerized systems using different algorithms methods.

- Remote access is enabled for different users through networked systems.
- Using ICT in agriculture saves space and reduces paper consumption.
- ICT is environment-friendly for users and the nation.

ICT devices used in agriculture

- Wireless technologies - a technology where data can be shared in the air rather than over wire networking between computers would be carried out with the help of a wireless adaptor.
- GPS (global positing system)- is a global navigation satellite system (A device locator that provides location globally)
- Smartphone Mobile Apps
- E-commerce Platform
- Computer-controlled devices(automated system)
- RFID(Radio Frequency Identification)- where digital data is encoded into tag form. It is a similar technology used by bar coder to identify the code or device

Limitation for Using ICT in Agricultural Libraries

- Less funding for ICT infrastructures.
- The initial cost is high.
- Many users find reading printing material easier than reading on the computer screen.
- Updating software and hardware from time to time.
- Less power supply in some places.
- Insufficient bandwidth and poor connectivity
- Lack of technical IT knowledge by library staff and management.

Conclusion

ICTs are very important tools which transform agricultural knowledge and information systems. Agricultural libraries need to adopt new ICTs to provide effective information services to farmers and other stakeholders. Agricultural libraries need to develop knowledge and skills on emerging ICTs for improvising their professionalism.

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