

Agricultural Scitech Network Information Resources Reorganization and Sharing in China

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Abstract

Reorganization of scitech network information resources and development of information infrastructure have brought a great change in China's scitech information sharing. It integrated not only information resources, but also systems, human resources and funds. High quality services and effective sharing of the resources are the main goals of the reform. The paper describes briefly the principles and aims of the integration of the agricultural related networks and services. The reorganization of the national and provincial network information resource sharing platforms have been introduced. The services of the sharing platforms have been also provided.

Keywords: network information resources, information reorganization, information services, agricultural network information, China

1. Introduction

Entering the 21st century, information network resources have become one of the core conditions for the development of the infrastructure of a country. Optimizing and reforming of the information network resources is critical and takes a key part in the construction of the national information infrastructure. According to <The 25th Statistical Report of China Internet Network Development status> by China Internet Network Information Center (CNNIC) Jan.15, 2010, up to Dec.2009, the Chinese network users reached 384 million. Compared with 2008, it has been increased 86 million and its popularization rate wins 28.9%. The broad band network users obtained 346 million and increased 76 million compared with that of the year 2008.

Following the fast development of the network and communication technologies in China, scitech networks were constructing tremendously without general planning and designing during the years from 1995 to 2005. A duplicated construction leads to great waste both in finance and resources and impacts badly information sharing and use at all levels of the country. In order to change the situation and make sufficient use of the resources, and provide powerful supporting to the scitech innovation and development, the scitech network information resources reorganization and reform had been scheduled and implemented since 2005 under guidance of the Chinese government.

2. Agricultural information network users

2.1 Agricultural research users

China's agricultural information system serves the whole agricultural research sectors. There are 150,000 agricultural research staffs in 1216 research organizations above prefectural level. Among which national level agricultural research staff are 6293 in 59 institutions, and provincial agricultural research staffs are 27693 in 464 institutions. The digital divide between East and West of China are obvious. Almost 5 provinces (municipalities) in the Eastern China (Beijing, Shandong, Zhejiang, Jiangsu and Guangdong) took up 50% of the agricultural related networks in the country.

2.2 Rural users

The network users in rural areas increased constantly and reached 106.81million, which accounted for 27.6% of the total network users of the country. The mobile phone users reached 233 million which took 60.8%, among which network users only use mobile phone accounted for 30.70 million, took 8% of the whole network users. The mobile phone users become one of the new increasing points of Internet users in China.

Until July, 2009, CNNIC survey showed that users visited agricultural or rural networks reached 45.29 million, taking 13.4% of the total users during the first half of the year. Users searching information in planting, breeding, agricultural products supply and demand, etc. took 40.4% and 39.6% (CNNIC, 2010). Following gradually enhancing of the informationalization level in rural areas, agricultural industrialization network platform have been constructed. However, the present users proportion of agricultural information networks is still low compared with developed countries and needs further development (CNNIC, 2010). In 2009, several factors that mutually forced the Chinese user scale increase including the investment increase in agricultural infrastructure, policy encouragement of household electricity products to rural areas and launch of 3G network (CNNIC, 2010).

3. Development of Chinese Agricultural scitech information networks

As the development of the world internet and information technology, the agricultural information networks have made a great progress in the past years in China including its network environment, various information searching and storage techniques, web publishing, cross platform searching and etc. The network information resources have become one of the most important information resources for agricultural R&D activities. The main networks include: “China Agricultural Information Network” (<http://www.agri.gov.cn>) by MOA set up in 1994. It links 3000 local networks which mainly distributes information on marketing and agricultural products. “China Agricultural Scitech Information Network” (<http://www.caas.net.cn>) by the Chinese Academy of Agricultural Sciences(CAAS), which provides Scitech Information in agriculture to support its R & D activities. There were other networks like the network of the Library of China Agricultural University (http://www.lib.cau.edu.cn/bggk_1.htm) and networks of provincial agricultural academies and universities. Besides, According to China MOA website, there are 168 municipality and county level agricultural information networks are also available (MOA, 2009).

4. Establishment of National level Scitech network resource sharing platforms

4.1 National Scitech network resource sharing platforms

The National Scitech network resource sharing platform is an important composing part of the national innovation system. It serves scitech progress and technology innovation of the whole society. Its construction mainly means strategic reorganization and systematic optimization of the scitech basic conditions resources. It will surely accelerate effective allocation and integrated use of scitech resources and enhance scitech innovation capacity of the society. Under the leadership of MOST of China, a platform construction program had been started in 2005. After three years implementation of the program, a series of scitech information resource sharing demonstration platforms have been set up to meet the needs of R & D of the country (MOST, 2009). Within the various platform projects, scitech document and information sharing platform and agricultural science data sharing platform are the often used platforms by Chinese agricultural information users.

4.2 Guideline and principles of the platform construction

The guideline of the construction were to take the reform as impetus, establishment of sharing mechanism as the core, resource system integration as the main line to build commonweal and strategic ciotech information platform in order to improve scitech innovation environment, enhance sustainable development ability and provide strong support for the R&D development of the country.

The principles of the construction contain: to extrude resource sharing, break the status of decentralization or monopoly of resources; to program and plan as a whole, strengthen upper class design, carry into execution step by step; to colligate and integrate useful resources, and realize integration, sharing, consummation, and improvement for a maximum exertion of potentials of scitech information resources; to jointly undertake the construction of the network under the leadership of the government. The central and local government should coordinate and mobilize all academic institutions, agencies, associations and corporations etc to participate the resource integration and construction.

4.3 National Scitech document and information resource sharing platform (NSTDIRSP)

Based on the “National Science and Technology Library Network” (<http://www.nstl.org.cn>) by NSTL (National Science and Technology Library), the NSTIRSP integrated information resources mainly in science, industry, medicine and agriculture by its member libraries of Institute of Scientific and Technical Information of China(ISTIC), Library of Chinese Academy of Sciences(CAS), Agricultural Information Institute of Chinese Academy of Agricultural Sciences(CAAS) and Library of Chinese Academy of Medicine(CAM). It adopted web services technologies which may realize integration and revealing of multi types of distributed information resource systems. The NSTIRSP has also integrated related information resources and services of China Academic Library & Information System (CALIS) by Ministry of Education(MOE), National Science Digital Library(CSDL), Metallurgy Information Standards Institute, China National Library, Lanzhou Branch of the Chinese Academy of Sciences, and some provincial scitech information institutions.

The NSTDIRSP has now provided 15000 titles of hard copy foreign journals that formed the sources for document delivery. It has also offered 34.15 million abstract records from foreign journals, proceedings, scitech reports, patents and standards documents, 540 titles of network version foreign journals, 8200 titles of network version Chinese journals, 218,649 titles of Chinese e-books and more electronic databases (NSTL, 2009).The agricultural scitech information resources added to the union catalogue of the NSTDIRSP annually amount to more than 200,000 foreign journal article abstract records and 300,000 quotation records. The records types include agricultural research papers, journals, conference proceedings, project development reports, digitalized historic materials, and etc. Those materials are mainly provided by the Agricultural Information Institute of CAAS and financially supported by the government.

4.4 National Agricultural science data sharing platform (NASDSP)

Agricultural science data platform by CAAS organized data resources in crop science, zoology and veterinary sciences, agricultural basic scitech data, fisheries and aquaculture, tropical crops, pasture science, agricultural resources and environment, agricultural biology, food engineering and agricultural quality standards, and agricultural information and scientific development. There are nearly a hundred institutions joined the construction of NASDSP and it integrated most of the data resources during long term cumulation of many institutions. The network resources divid into nine categories and form 73 databases. According to different categories, government sponsored databases resources have been integrated. This forces the construction of the network resource sharing services. The contents types of the databases are comprehensive, including agricultural scientific research data; scientific achievements; agricultural scientific policy and regulations; agricultural scitech comprehensive ability information; agricultural documents; agricultural science dynamic information; agricultural high tech dynamic information seeking and etc.

Centralized planning, enhanced coordination and standardization in database construction are the key factors in the reorganization and construction of the platform. The data center also offers interactive possibilities with different structured databases from other sources. In this way, the data center plays the role of “one stop shop” in its user services.

4.5 Local agricultural related information sharing platforms

Agricultural networks totals 6300 in China before 2005. Each province, agricultural university or research institute had its own network. For an example, China Agriculture Online (<http://www.Agrionline.net.cn>) by Universities provides information on agricultural news, scitech and education, expert forums, agri. economy, human resources, laws, business etc. Golden Agriculture Network (<http://www.agrie.com>) provided information on agricultural product supply and need, international agricultural trade, prices, references, rural China, Chinese peasants etc. And North China Agricultural Information Network (<http://www.agri.net.cn>) Provided information on seeds, production materials, forest products, feeds, fisheries, flora, agricultural products marketing, international food market, rich-becoming information, crop pest and disease predictions and control etc.

After reorganization of the network resources, local platform constructions also have made great progress. At present, there are more than 30 provinces (cities, districts) to have started up local scitech information sharing platform construction. Some of them have formed different or special characteristic local platform construction system and realized resource integration and sharing to a certain extent. It forms effective support to the regional scitech innovation and technical progress(MOST, 2009). For an example, Zhejiang province scitech information sharing platform organized 13 institutions of the province to share the needed information like scitech journals, special databases, digital resources guide, online consultation, etc. Moreover, Gansu, Guangxi, Hubei, Liaoning etc. all realized the scientific information sharing in the areas.

5. Agricultural Scitech Network information resource services

5.1 Integrated information searching and document delivery

Among 34.15 million abstract records of foreign journal articles, there are about 2 million records in agricultural and biological sciences. All users of the country may search the abstract database freely. The document delivery services are offered whenever the full text is needed.

5.2 Database of International Science Citation(DISC)

DISC is another integrated service system for document discovery, quotation linking and document delivery. It has collected over 3000 titles of core journals published around the world. Currently, its quotation records cumulate more than 30 million covering disciplines of natural sciences, medicine, engineering etc.

5.2 OA journal services

The NSTDIRSP provides a directory of OA journals from foreign countries. Its sources are DOAJ, SCOLAR, cnpLINKer, Open Science Directory etc. It lists over 4000 open access journals in 17 disciplines such as agriculture, forestry, medicine, engineering, business and economics etc to provide Chinese users a friendly accessibility of foreign OA journals.

5.3 Subject portals

Sponsored by NSTL, agricultural subject portals have been set up like Food and Nutrition Portal, Water Saving Agriculture Portal and Agricultural Tridimensional Pollution Control Portal. Through those portals, users of interested groups may find their interested information and links easily.

5.4 Directory of useful agricultural websites of the world

To mine up the most useful resources of internet, the directory of main agricultural websites of the world is one of the meaningful services of the NSTDIRSP. The Directory covers information of web address, organization, subject scope, resource amount and format, searching methods, and frequency of update. Its aim is to guide the users to use the global scitech information resources.

5.5 Online information inquiries

In order to provide useful information services and facilitate use of scientific knowledge, NSTDIRSP platform offers Online information inquiries. Through real time inquiries, users may consult questions directly with consultants. The inquiry results will be input into the “responds database” for future consultations.

5.6 Full text e-journals

The NSTDIRSP provides 450 titles of full text foreign journal services. The journals are from various publishers, like IGI Global press, USA, Mary Ann Liebert, USA, Rapra Technology Limited, UK, Rapra Technology Limited, UK, Toronto University Press, Canada, CSIRO, Australia, etc. It offers online fulltext services to users throughout the country.

6. Conclusion

The agricultural information resource reorganization and sharing in China have been undertaken for more than three years. It is obvious that the collaboration and sharing services of network information resources at the national and local levels have been realized to a certain extent. However, mutual construction and sustainable development of scitech sharing network information resources is a long term task of all joining organizations. It still needs effective policy support, system and regulation guarantee, financial assistance and better sharing mechanisms etc. in order to further strengthen the agricultural scitech information resource sharing ability of the country.

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