



RECENT DEVELOPMENTS IN AGRICULTURAL INFORMATION RESOURCES SYSTEMS.

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ABSTRACT

This study was carried out to investigate the use of agricultural information sources and services by farmers for improve productivity in Kwara state, Nigeria. The objectives of the study was to determine the information sources and services available to farmers in Kwara State and assess the purpose for which farmers in kwara state utilize available information sources and services. The study adopted the survey design in a population of 55,522 farmers from whom 447 were sampled in six local government areas, which were made up of two from each of the three senatorial districts in the State. Questionnaire and interviews were used to generate data, which were descriptively analysed to answer the research questions. The results showed that the information sources and service mostly used by the farmers included relations, fellow farmers, town criers, television, mobile phones, film shows, radio, etc. The need for information made the farmers to use it for crop and animal production; pests, diseases and weed control; fishing; disaster control and mitigation, fertilizer procurement and application; post-harvest technology; sourcing for labour; agricultural credit; etc. The study therefore recommended that Kwara State Government should train extension workers on how to use information communication technology such as mobile phone on how to subscribe for agricultural information and also there is a need to extend agricultural extension services to all the local government areas through established centers where farmers can obtain required information on agricultural productivity, marketing of farm produce and post harvest technology to increase their productivity.

Keywords: Recent Developments, agricultural extension services

Introduction

Information has received a wide range of acceptance as an essential resource of this century. It has been described as a simulating creativity, resulting in new outcomes and processes. All human societies depend very much on information for existence that is information is life. The proper identification and use of information sources are prerequisites for objective decision making. Consequently, the possession of awareness and use of appropriate information guarantee individual and organizational functioning. The major function of information is to increase the knowledge of the user, to reduce his level of uncertainty or reduce the varieties of choices available to the users of information. For information to be effective, it must be accurate, timely and relevant. Ayanyemi (2006) referred to information as an essential resource for individual growth and survival. An

informed mind is an enriched mind and if one is not informed he will be deformed. Information is a common term. It is often in the mouth of people, attracting diverse and ambivalent meanings and interpretations. Uhegbu (2007) opined that hardly can one mention the word 'information' without referring to somebody; the educated understand information from their various backgrounds. Anything human beings interact with or observe can be a source of information (Bates 2012). The information source is a medium in which knowledge and/or information is stored. In other words, it is understood as something that contains and/or stores information (Bitso, 2012). Sources of information are tools that can possibly meet the information needs of different categories of users. They are the information carriers. There are different sources of information but what matters are 'what' sources are available and relevant to the different categories of users and what sources of information are useful for their different seeking behaviour, and mainly for utilization in order to accomplish tasks/needs.

Information sources are various means by which information is recorded for use by an individual and organization. Sources of information are: radio, television, extension workers, cooperative societies, friends and colleagues, newspapers and magazines, books/leaflets, phones, libraries and institutes. Also, observation of people organizations, speeches, documents, picture and art work can also be described as information sources.

Information services are the activities performed to facilitate any stage of the life cycle of information. The life cycle includes the creation, organization, use and disuse. Information services can be defined as services which provide (serve) data, knowledge, and information that are of interest to users. The interaction is that an information service collects (retrieves), manages (structures) and stores data. Productivity is measured as the ratio of agricultural input to output however; individual products are measured by weight and their densities. Measuring overall agricultural output are difficult because the output is usually measured as market value of final product; which excludes intermediate materials that goes to production such as corn feed used in the meat industry

Agricultural productivity may also be measured by what is termed total factor productivity (TFP). This method of calculating agricultural productivity compares an index of agricultural input to an index of output. Productivity therefore measures changes in efficiency with which input is transformed into output. The indices for measuring are land, input hire, labourer energy input agricultural chemical input, pesticides consumption, fertilizer and capital.

The first part of this article identifies principal sources of agricultural information-who produces it, what forms it takes, and where it comes from; the second part provides a brief look at major library collections where agricultural information may be found or otherwise accessed. Representative examples are provided throughout with suggested sources for fuller and more detailed information.

AGRICULTURAL INFORMATION

The organizations involved with the funding, production, or distribution of information fall somewhat naturally into a spectrum ranging from those with primarily local concerns to those with broad regional or international concerns. However, the increasingly interdependent nature of research, technology, and commerce means that even a narrowly focused state agency may need to concern itself with international issues.

Local Level

Major sources of information at the local or state level are colleges and universities. These institutions play a unique and indispensable role in the conduct of basic and applied research, much of which is done in response to the local geoclimatic and socioeconomic conditions.

In the United States, the seventy-two land-grant institutions provide a vast array of agricultural information through the agricultural experiment station and extension service programs. These institutions, together with fifty-three other state universities and twenty-four system administration offices, constitute the National Association of State Universities and Land Grant Colleges (NASULGC) which collectively represents the largest body of researchers and resources for agricultural research and development. Typically, each institution has a college or other similar organizational unit for agriculture with a publication or information section responsible for distributing research and extension materials. The information distributed via official college, agricultural experiment station and extension service bulletins, reports, and other publications represents only a small fraction of the total information generated at such institutions. The remainder is distributed via books, journals, conference proceedings, etc. Additional information on NASULGC members is contained in *Sewing the World: The People and Ideas of America's State and Land-Grant Universities* (NASULGC, 1987).

Outside the United States, colleges and universities perform similar roles in generating and distributing information. Although arrangements vary considerably, typically one must contact the appropriate department within the college or university to arrange for publications, and it is not uncommon for materials to be available only on an exchange basis. A variety of national and international directories provide listings of departments within colleges and universities; *World of Learning* (1988) is particularly useful, not only for its international coverage but for its listing of publications by each institution.

In addition to universities and local governmental agencies there are many private agricultural organizations, the membership of which ranges from professionals to practitioners to interested individuals. In the United States these organizations are largely state-based interest groups, sometimes representing local chapters of a national parent group. The *Directory of American Agriculture* (1989), for example, lists over 4,000 such organizations on a state-by-state basis. Generally, the publications of these groups are limited to newsletters and public awareness pamphlets; however, many also publish substantive reports of enduring local or even national interest. Acquisition of these documents tends to be difficult and scattered at best, and, therefore, bibliographic control of these materials very poor.

National Level

The principal sources of information at this level are the national governments, national research organizations, and companies or corporations involved in agricultural research. The United States will be discussed as an example of national government information sources. The U.S. federal government is one of the largest sources of agricultural information in the world by virtue of the studies done by federal researchers, as well as federally funded research conducted by both.

Publications originating from regional branches of federal agencies represent a special concern because many are not made available to either GPO or NTIS for further distribution and bibliographic control. Federal depository librarians have long been concerned by these "fugitive" documents (Bower, 1989) which are often referred to in press

releases, editorials, journal articles, or other federal documents, but which are essentially “lost” and difficult to obtain or even identify accurately.

Another unique source of agricultural information is the patent, an increasingly important component in technology transfer. Most of the major advances in agricultural engineering and machinery, agricultural chemicals and pharmaceuticals, and, more recently, biotechnology (including genetic engineering, tissue culture, and enzymes) can be documented in the patent literature. Plant patents for asexually reproduced new plant varieties are also handled by the Patent and Trademark Office (PTO). Copies of patents are available from the PTO, from patent depository libraries located throughout the United States, and through a variety of document delivery services. New sexually reproduced cultivars are protected through the Plant Variety Protection Office which is a part of the Agricultural Marketing Service of the USDA. Evenson (1989) provides an interesting overview of this topic using patents as a basis for studying technology transfer and agricultural competitiveness. Several guides are available which provide detailed.

The role of Information Technology to develop agricultural research, education and extension to improve quality of life in rural area is well established. IT can help an average Indian farmer to get relevant information regarding agro-inputs, crop production technologies, agro processing, market support, agro-finance and management of farm agri-business. The agricultural extension mechanism is becoming dependent on IT to provide appropriate and location specific technologies for the farmers to furnish timely and proficient advice to the farmers IT can be a best mean not only to develop agricultural extension but also to expand agriculture research and education system. The excellent scopes of Internet are waiting to develop agricultural education management through smart exposure of agricultural teachers and educational planners, class rooms, virtual class as well as dropout agricultural learners. For agricultural extension management, role of IT can be encouraged for future resource documentation, as methods of extension and linkage between research and extension. IT in agricultural research management for textual and non textual documentations and deciding prioritization of research areas needs to be reinforced. The crop forecasting, input management, command area management, watershed management, land and water resources development , drinking water potential mapping precision management, natural disaster management, fishery management , hill area development and post harvest management are the key areas, where Information Technology can play its imperative impact.

AGRICULTURAL EDUCATION MANAGEMENT

Since independence, the higher education system has undergone many changes. The number of universities has gone up from 19 in 1947 to 275 in the year 2000. At the same time the number of colleges have increased from 591 to over 10,000 and students strength from 0.2 million to about 7.0 million. Today with over 3, 00,000 teachers, the Indian higher education system is the second largest in the world. Considering this scenario of agricultural education the enrolment of students in agriculture remained only 1.5% in agriculture and allied fields. However the percentage of students studying for professional degrees is extremely low. In Japan more than 30% students are studying for engineering degrees, whereas in India, it is hardly 5%. Everyday where one college is being opened in India, only 6 % of Indian population in the age groups of 18 to 23 years is getting the benefit of higher education. With this background in view, we can be able to understand, how difficult it is to face the challenges of higher education in 21st Century which is being dominated by the Information Technology. This clearly indicates that all out efforts need to be made in higher

education especially in the field of science and technology to harness the youth potential of rural India.

AGRICULTURAL RESEARCH MANAGEMENT

The major contribution of agricultural research in India has been reflected in various agricultural revolutions during the post independence period. The result of agricultural research boosted the food production and we could see the Green, White, Blue and Yellow revolutions in the fields of Cereal crops (wheat), Milk, Fisheries and the Oil Seeds witnessing the Golden Revolution of horticulture crop production. However with the advent of new emerging agricultural technologies there was a change in focus from increased production to increased efficiency.

The Agricultural Extension System (AES) has five important pre requisites

1. Regular training and maintaining of extension workers and functionaries at various levels in the specific knowledge and skills.
 2. Monitoring the AES and understanding the constraints.
 3. Strong information, documentation and publication support.
 4. Effective institutional network for synergetic support.
 5. Develop national and international linkages. For this strong information, documentation and publication support are very pivotal. IT can play significant role in this.
- Planning for Future Resource Documentation: The production of CD ROM on special topics can be the best mean for future resources documentations.
 - IT in Methods of Extension: E-Extension: This a new term coined for electronic extension approach, which is otherwise can be called as I.T. oriented Extension.
 - For the linkage between Research, Extension and IT 's role can be encouraged : The network between different agencies like Agricultural Science Centers (Known as Krushi Vigyan Kendra) ,Farmers Training Centers , Agricultural Technology Management Agency and Information Shops needs to be developed for useful linkage and proper utilization of available resources. The human resources will have to be trained in usage of IT Tools and all infrastructure facilities required for strengthening the Agricultural extension System and Services.

AGRO-BASED RURAL DEVELOPMENT

It is assumed that 60 to 85% of household consumption belongs to agricultural products so agriculture plays important role in industrial development, it provides raw materials to industries like cotton textiles, jute, sugar, tobacco, edible and non edible oils, leather, plantation industries etc. The food processing industries is also dependent on agriculture. Lots of agro based materials are exported in European and Gulf countries by India. In all such agro -based industries, role of IT needs to be improved. IT Tools are very useful in creating effective linkages in agro based industry activities. These linkages are concerning dissemination of useful information. Linkages of the producers can be with State Federations and National Federation and Board, Finance Corporation. Advertisement is best way to add value of products. This market again can be very well established with available database of product wise information on products with comprising data of competing nations of the world. IT can help in this direction.

IN AGRICULTURAL PRODUCTION

The IT Approach for commercial crops, horticultural crops or floriculture have to focus on Integrated System may be for plant nutrition or plant protection. The well established Integrated Plant Nutrition Approach and Management and Integrated Pest Management (IPM) need to be strengthened with the help of IT Tools. The Post Production Technology (PPT) needs to be utilized properly. The end user, beneficiaries and all concerned especially with export of agricultural produce need to be trained to access the Internet facilities available as one of the most useful IT Tools of the computer era.

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