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# Information resources on agricultural economics: A study with special reference to Kerala

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Opines that scientific planning for agricultural development to overcome backwardness is very important for India. Speedy and sustainable agricultural development is tied closely to effective planning which in turn rests heavily on information available for the process. Information specifically related to this area is classified under agricultural economics. This makes information systems on agricultural economics very crucial in the context of increasing requirements for food grains as well as globalization. Examines the coverage of agricultural economics, nature of information on the area, and the importance of technical and marketing information to managers, farmers and other stakeholders to take maximum advantage of the WTO Regime. Examines in detail the resources of information units of organizations dealing with agricultural economics in the region and the provisions for resource-sharing between them. Reveals that information resources available collectively are sufficient, but that at individual institutions are not adequate, full or reliable. Recommends a resource sharing programme for institutions concerned with agricultural economics.

## Introduction

Agriculture is the lifeblood of the Indian economy. It contributes to nearly 25% of Gross Domestic Product and about 70% of India's population is dependent on agriculture for their livelihood. Growth in the productive capacity of the agricultural sector is crucial to the survival and development of the country. Agricultural economics which deals with scientific planning for agricultural development has become an important area of specialization in agriculture. Speedy and sustainable development in agriculture is tied closely to effective planning and adequate information flow. This makes information systems, especially those that support agricultural economists, very crucial for development of the country.

The concern of agricultural economists of India is predominantly on issues of how to feed India's growing millions, of how to provide adequate income and employment to the vast majority of our people who depend on agriculture for livelihood and how to do all this with the country's limited land and water resources. In addressing these issues, agricultural economists not only deal with the problems of capital accumulation and efficient resource allocation that all economists are concerned with, but also on implications of fixed factors of production and of uncertainties deriving from natural occurrences such as weather and pests. The existence of fixed and to some extent non–renewable natural resources reveal that long term growth can not come from capital accumulation alone and that this requires continuous technological progress. It has also forced agricultural economists to recognize that there are trade offs between short term growth and long-term sustainability, particularly when it comes to securing output increase through more intensive mining of our soil and water resources. Since nature and natural uncertainties loom large in the matters agricultural economists are concerned with, they have also given more explicit consideration than most other economists to risk analysis, both in terms of modeling individual behaviors and in terms of the design of the public policy and investment. While these concerns are common to all agricultural economists, those in India have the added responsibility of struggling with these issues in the context of the fact that most of our people work in agriculture, we remain the world's most malnourished nation, and that the levels of both physical infrastructure and human development are still unsatisfactory especially in rural India. So the main focus of the agricultural economists in India has to be on the role of agricultural development in overcoming backwardness.[1]

Timely relevant information support is crucial for agricultural economists to achieve their mission. Information is a productive resources in agriculture, potentially influencing the efficiency of production, marketing, processing and administration. The development process in agriculture rests heavily on information available for planning and management in the sector[2]. Thus, information support systems for agricultural economists are very important especially in the context of increasing requirements for food grains as well as globalization.

**Information on economic aspects of agriculture**

An agricultural information system covers subject areas not only from botany, zoology, chemistry, physics and mathematics but also from geology, ecology, meteorology, engineering, economics, sociology and statistics. So all agriculture related institutions will be having collections on agricultural economics.

Economics is the practical and theoretical science of the production and distribution of wealth. The discipline of agricultural economics is concerned with a wide range of issues from policy formation, through development programmes, the economics of the food industry, natural resource utilization, farm management, education, research, extension and rural development. Agricultural information services have to cover all aspects of interest to managers and economists working in agricultural sector. Agricultural economics also covers the production of food and agricultural products from the input industries to the distribution of the final product. The economics of pest control and fisheries, and the areas like forest and environmental economics are also dealt in this field. Rural development which is the process whereby rural communities progress from given situations to more desirable situations in terms of their quality of life also is a concern of agricultural economics. Rural development depends upon the utilization of local physical and human resources, supplemented by investment, technology and services with full participation of the local people in decision making. Agricultural development is closely connected to rural development.

**Nature of information on agricultural development**

Information services to agricultural economists have to deal with published literature on economics or planning and development in all fields of agriculture, animal rearing, fisheries, forestry, human health, human nutrition, animal health and the management and conservation of natural resources[3].The rate of accumulation of knowledge in agriculture related areas is a hundred times more than it was at the beginning of the last century. About 9000 periodicals and more than one lakh books are published annually related to agriculture along with innumerable number of other documents in different languages of the world[4].

Agriculture being climate dependent to some extent, agricultural economists from an agro climatic region require information generated in the region itself as well as elsewhere on the region. It is mainly information on economic aspects of the crops and animals reared in the region. So the information generated by the institutions existing in the region is of primary importance. Such institutions also acquire and store information generated elsewhere on those topics relevant to the specific region.

Recently India's economic and financial policies have undergone extensive changes. Many structural changes have been brought into the traditional system, to integrate the country into the new world economic order. Liberalization and globalization have become the keywords in the present policies. With the signing of the Marrakech Accord (WTO) in 1994, large increase in global trade was expected in clothing, agriculture, forestry and fishery products and processed food and beverages – areas where India has a competitive advantage[5]. But our agricultural sector has constraints in fully participating in International Trade due critical gaps including availability of information on prices, demands, quality, standards etc. Efficient information systems will be essential to fill these gaps by transmitting international signals to our agricultural economists and farmers.

Information systems have a crucial role to play in providing a good understanding about different aspects of the WTO Regime to all stakeholders in the field of agriculture including cultivators, traders, exporters, scientists, breeders, plant protection personnel, staff of the development departments, and media persons.Such a system can help to achieve higher income and prosperity through productivity improvement, quality enhancement, value addition, and farmer friendly marketing of agricultural products.

The systems, which bridge the gap of information downpour on the one hand, and the information needs of the users on the other and are libraries. In Kerala, the libraries attached to Kerala Agriculture University and its constituent colleges and research centres as well as ICAR institutes, and Agricultural Department of State Government are responsible in fulfilling the information needs of the agricultural sector in the State. Libraries offer various traditional and modern services to the users. But their efforts are presently individual and isolated[6]. Therefore, the scope, comprehensiveness, coverage and cost effectiveness of their services are limited. In addition to these there are also libraries of many organizations coming under government, private organizations, and NGOs within and outside the sector dealing with agricultural information provision. In the above context a study of the resources, facilities and services of library and information units of organizations dealing with agricultural economics in the State and the provisions for resource-sharing between them becomes very important and relevant.

### Objectives of the study

This present study forming part of a detailed investigation[7] on agricultural information systems is intended to evaluate the resources, facilities and services available for agricultural economists from library and information units of the organizations in agricultural sector and outside. Primary objectives of the study are:

1. To examine the existing information resources in agricultural economics and to assess possibilities for resource sharing in agricultural sector of the State,
2. To examine how far important databases in agriculture economics are accessible to institutions in the State and,
3. To identify the factors that affect the quality and efficiency of information services on agricultural economics.

### Methodology

Questionnaire and interview methods were used to collect data for the study. Kerala was taken as the geographical area within which the study is limited. The samples consisted of 10 major institutions of different sizes dealing with agricultural economics. Details about the strength of scientists, collection of books, journals and electronic publications, databases, budget, etc of the institutions have been studied.

### Institutions handling agricultural economics

Indian Council of Agricultural Research (ICAR), Kerala Agricultre University (KAU), State Government and universities have under them hundreds of institutions at different levels in the State of Kerala with excellent document resource collection on agricultural economics. In addition many non governmental organizations, private companies, autonomous institutions and societies are also engaged in related activities. However, for this study, only 10 major organizations with substantial collection on this area are covered. They are College of Agricultural Engineering (CAE), Thavanoor; College of Co-operation, Banking & Management (CCBM), Thrissur; Centre for Development Studies (CDS), Trivandrum; College of Horticulture (COH), Thrissur; Central Plantation Crops Research Institute (CPCRI), Directorate of Economics and Statistics (DES) of Kerala, Indian Institute of Spices Research (IISR), Calicut; Kerala Agricultural University Library (KAUC), Thrissur; Kerala Forest Research Institute (KFRI), Peechi and State Planning Board (SPB).

### Budgetary provisions

For information service provision finance is as important and necessary as water for production of bumper crops. Data on budget allotted to the libraries collected from the sample institutions[8-15] covered by this study is given in Table 1. Data on the total budget of the institution, percentage allotted to library, and the spread of library fund among different aspects in the library are presented in Table 2. The data presented in Table 2 reveals that allocation for library development in most of the institutions is fluctuating from year to year. Of the total allotment to the 10 libraries with collections on agricultural economics, an average of 77% goes to collection development, 25 % goes to staff and 18 % for other expenses.

The available data reveals that; the allotment to the libraries in most of the departments and institutions in agriculture sector is close to the percentage recommended by UGC Library Committee, Agricultural University Library Commission etc, which is 6% of the institutional budget. But CPCRI spends 6.91% and CDS spend 5.81 %, which are close to the optimum amount. KFRI and IISR have used 5.79% and 5.10 % respectively.

## Human resources

Present staff strength of the selected agricultural libraries is shown in Table 3. The data reveals that the sample libraries have sufficient information professionals to attend to information services on agricultural economics. There are 21 professionals with post graduation in library and information science and 14 staff with bachelor's degree in the subject. The survey revealed that of the total 36 professional staff in the 10 selected libraries dealing with agricultural economics, 14 have BLISc and 21 have MLISc qualifications.

## Collection

In any information system the most important resource or input for services is its collection. Collection consists of relevant recorded knowledge in the form of books, journals, reports, microfiche, cassettes, floppy discs, CDROMs, video films, etc. They form the basic resource for providing services in an information system. In agricultural libraries the collections contain a wide variety of materials like, books, video films, CD-ROMs, posters, theses, maps, etc.

CDS is a haven of information resources on economics and agricultural economics. It has a good collection of journals and databases especially electronic versions. It subscribes to 230 journals 75% of which are related to economics and of relevance to agricultural economists[16]. Of these 19 journals are of high relevance to agricultural economists. The major databases and reference sources of interest to agricultural economists available there are; EconLit a comprehensive, indexed bibliography with selected abstracts of the worldwide literature on economics from major economic journals, books and collective volumes; EMDB 2000 (Emerging Markets Data base from IFC-World Bank) Data base contains the latest figures for all IFC indexes-Global, Investable, industry, and frontier-and market data such as prices, corporate actions, and stock ID information, India trades,

Table 1 – Library budget during 1998-99 to 2002-03 (Rs. Lakhs)

| Institution | 1998-99 | 1999-00 | 2000-01 | 2001-02 | 2002-03 |
|---|---|---|---|---|---|
| CAE | 14 | 20 | 15 | 18 | 20 |
| CCBM | 08 | 08 | 09 | 09 | 13 |
| CDS | 22 | 24 | 30 | 29 | 34 |
| COH | 12 | 7 | 8 | 10 | 11 |
| CPCRI | 20 | 23 | 26 | 28 | 43 |
| DES | 02 | 02 | 02 | 02 | 05 |
| IISR | 15 | 18 | 18 | 20 | 25 |
| KAUC | 200 | 150 | 75 | 75 | 101 |
| KFRI | 22 | 21 | 22 | 25 | 35 |
| SPB | 04 | 04 | 04 | 05 | 08 |
| Total | 319 | 277 | 209 | 221 | 295.00 |

Table 2 – Budget of institutions and allotment for library development during 2002-03 (Rs. Lakhs)

| Institution | Total | Lib | % | Colln | % | Staff | % | Othr | % |
|---|---|---|---|---|---|---|---|---|---|
| CAE | 425.00 | 20.00 | 4.71 | 12.50 | 62.50 | 4.00 | 20.00 | 3.50 | 17.50 |
| CCBM | 295.00 | 13.00 | 4.41 | 7.01 | 53.92 | 3.00 | 23.08 | 2.99 | 23.00 |
| CDS | 585.00 | 34.00 | 5.81 | 21.77 | 64.03 | 9.00 | 26.47 | 3.23 | 9.50 |
| COH | 375.00 | 11.00 | 2.93 | 7.47 | 67.91 | 2.00 | 18.18 | 1.53 | 13.91 |
| CPCRI | 620.00 | 43.00 | 6.94 | 36.20 | 100.56 | 6.00 | 16.67 | 0.80 | 1.86 |
| DES | 175.00 | 5.00 | 2.86 | 3.11 | 62.20 | 1.00 | 20.00 | 0.89 | 17.80 |
| IISR | 490.00 | 25.00 | 5.10 | 20.40 | 81.60 | 4.00 | 16.00 | 0.60 | 2.40 |
| KAUC | 3500.00 | 101.00 | 2.89 | 90.25 | 91.34 | 8.50 | 13.86 | 2.25 | 2.23 |
| KFRI | 605.00 | 35.00 | 5.79 | 23.52 | 67.20 | 10.00 | 28.57 | 1.48 | 4.23 |
| SPB | 250.00 | 8.00 | 3.20 | 5.05 | 63.13 | 2.00 | 25.00 | 0.95 | 11.88 |
| Total | 7320.00 | 295.00 | 4.03 | 227.28 | 77.04 | 49.50 | 25.00 | 16.78 | 18.22 |

Table 3 – Professional staff and qualifications

| Institution | Total | Professionals | Others | MLISc | BLISc |
|---|---|---|---|---|---|
| CAE | 03 | 02 | 01 | 01 | 01 |
| CCBM | 02 | 01 | 01 | 01 | 00 |
| CDS | 17 | 14 | 03 | 07 | 06 |
| CFISH | 04 | 03 | 01 | 02 | 01 |
| COH | 02 | 01 | 01 | 01 | 00 |
| DES | 01 | 01 | 00 | 00 | 01 |
| IISR | 03 | 02 | 01 | 02 | 00 |
| KAUC | 16 | 07 | 09 | 03 | 04 |
| KFRI | 06 | 04 | 02 | 03 | 01 |
| SPB | 03 | 01 | 02 | 01 | 00 |
| Total | 57 | 36 | 21 | 21 | 14 |

Table 4 – Resources in major agricultural institutions

| Institution | Scientists | Books | Journals | Online sub | ElectrDoc | Audio | Theses |
|---|---|---|---|---|---|---|---|
| CAE | 42 | 5113 | 60 | 00 | 47 | 00 | 128 |
| CCBM | 15 | 7760 | 54 | 00 | 04 | 00 | 21 |
| CDS | 28 | 14230 | 38 | 02 | 120 | 00 | 570 |
| CFISH | 40 | 4014 | 31 | 00 | 28 | 00 | 39 |
| COH | 140 | 13004 | 29 | 00 | 00 | 00 | 1400 |
| DES | 28 | 1213 | 09 | 00 | 00 | 00 | 60 |
| IISR | 45 | 3575 | 91 | 00 | 27 | 02 | 40 |
| KAUC | | 13381 | 320 | 04 | 520 | 600 | 1200 |
| KFRI | 55 | 12175 | 76 | 02 | 30 | 00 | 200 |
| SPB | 27 | 3808 | 23 | 00 | 100 | 00 | 58 |
| Total | 420 | 78273 | 731 | 08 | 876 | 602 | 3716 |

Table 5 – Detailed subject representation in collections

| Institution | Agriculture | Veterinary Science | Fisheries | Forestry | Agriculture Engineering | Agriculture Economics | Total |
|---|---|---|---|---|---|---|---|
| CAE | 2277 | 184 | 25 | 50 | 1388 | 844 | 4768 |
| CCBM | 750 | 100 | 25 | 25 | 25 | 6750 | 7675 |
| CDS | 5475 | 1255 | 500 | 500 | 1075 | 5250 | 14055 |
| CFISH | 152 | 132 | 3492 | 10 | 48 | 97 | 3931 |
| COH | 12779 | 775 | 15 | 57 | 317 | 320 | 14263 |
| DES | 144 | 15 | 03 | 28 | 26 | 877 | 1093 |
| IISR | 2685 | 50 | 00 | 75 | 275 | 450 | 3535 |
| KAUC | 10255 | 537 | 32 | 500 | 237 | 620 | 12181 |
| KFRI | 550 | 125 | 50 | 10250 | 500 | 450 | 11925 |
| SPB | 1600 | 95 | 40 | 300 | 245 | 1500 | 3780 |
| Total | 36667 | 3268 | 4182 | 11795 | 4136 | 17158 | 77206 |
| Percentage | 47 | 4 | 5 | 15 | 5 | 22 | 100 |

is a database of foreign trade statistics provided by the Government of India which covers various databases of relevance to agricultural sector; KERALAM: a comprehensive, indexed bibliography with worldwide literature on Kerala, Humanity Development Library - for sustainable development and basic human needs, NSSO : Round 48, Sch 18.1 : Land and livestock holdings, Round 54, Sch 3.3: Information on common property resources and village facilities; PROWESS: Corporate database from Centre for Monitoring Indian Economy, and SOFA 98: State of Food and Agriculture from FAO, Rome.

The resources available at the major Institutions covered by the study are presented in Table 4.

Scientists, including extension workers and teachers, are also to be considered as information resource in agricultural sector. They act as a major source of information to administrators, planners and farmers. Hence their strength is also listed as resources.

Sizes of the collection of information recorded in various media in the libraries covered vary in quantity from 1000 to above 14000. The libraries together have a collection of 78273 books, Theses, reports, maps, microforms etc together comes to 3716 documents

Data related to the representation of major subjects under agriculture and related areas in the book collections of the selected institutions are presented in Tables 5.

The survey reveals that, of the books available in the selected institutions 47% is general agricultural books. Books on forestry come to 15 %, veterinary and animal sciences 4%, fisheries 5%, and agricultural engineering 5%. Of the total collection of these institutions agricultural economics and related subjects comes to 22%.

Data related to books and journals on agricultural economics available at the selected institutions is provided in Table 6.

Of the total collection of books in selected institutions; College of Co-operation, Banking & Management at Thrissur functioning under KAU has the largest collection of books on agricultural economics consisting of 6750 books. It comes to 33% of total collection of books on agricultural economics. CDS with 5250 books comes in second position. The books on agricultural economics and related areas subscribed by 8 major institutions specializing on that subject area is graphically presented in Figure 1.

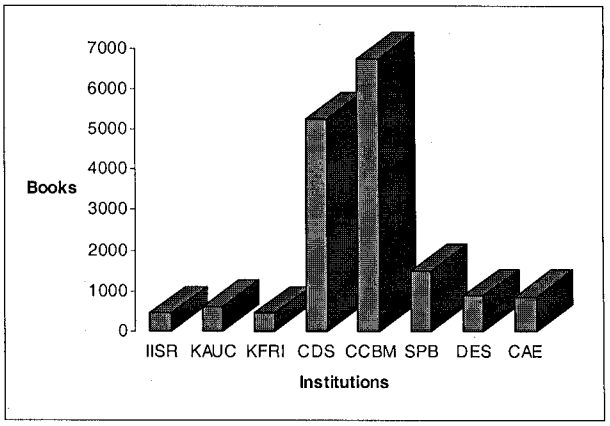


Fig. 1 – Books on agricultural economics in sample collections

## Journals

The data related to the journals subscribed by sample institutions is presented in Table 7. In March 2003 the institutions together subscribed to 707 periodicals. The journals subscribed consist of duplication of more than a hundred titles between these institutions. Total annual subscription cost of the agricultural journals in selected institutions comes to Rupees one hundred and two lakhs.

Of these 364 are foreign periodicals and 343 are Indian periodicals. Of the 707 journals 80 titles are on agricultural economics and related areas. A comparison of the collection strength of journals on agricultural economics and related areas subscribed by 8 major institutions specializing on that subject area is graphically presented in Figure 2.

CCBM subscribes to 54 journals of which 19 are on agricultural economics. This comes to 12% of current journals on agricultural economics subscribed by the

Table 6 – Books and journals on agricultural economics

| Institution | Books | % | Journals | % |
|---|---|---|---|---|
| CAE | 844 | 4 | 3 | 2 |
| CCBM | 6750 | 33 | 19 | 12 |
| CDS | 5250 | 26 | 19 | 12 |
| DES | 877 | 4 | 3 | 2 |
| IISR | 450 | 2 | 9 | 6 |
| KAUC | 620 | 3 | 16 | 10 |
| KFRI | 450 | 2 | 3 | 2 |
| SPB | 1500 | 7 | 8 | 5 |
| Total | 16741 | 81 | 80 | 51 |

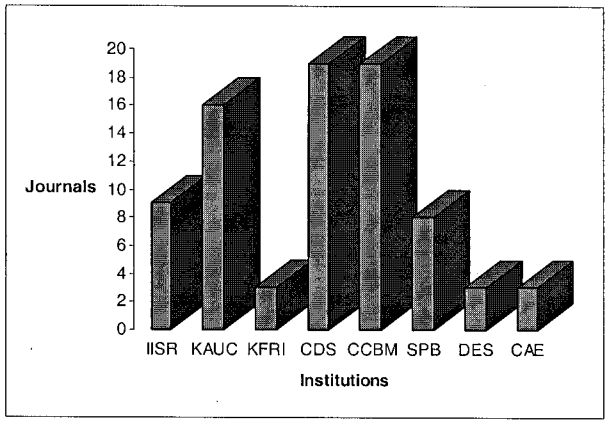


Fig. 2 — Journals on agricultural economics in sample collections

sample institutions. CDS also subscribes to the same number of journals on the subject. With 16 journals KAUC comes in second position with regard to collection strength of journals on the subject.

## Duplication of journals

The survey of the journals subscribed by sample institutions reveal that even though they together place 80 subscriptions. It consists of only 31 titles. Details of the journals costing above Rs. 25000 related to agricultural economics subscribed by the selected institutions is provided in Table 8.

From the data collected it is found that of the 10 institutions; five subscribe to a total of 11 journals each costing above Rs. 25000. Total cost of journals comes to Rs 5, 80 000/-. But these items are available for use normally in the institution which subscribes the concerned title. These five institutions have three or two titles each. Under a resource sharing programme all these titles can be made available for use in all the 10 institutions so that each institution gets resources worth Rs. 5, 80204. Details of journals duplicated by the institutions are presented in Table 9 to show the nature of wastage of resources due to duplication.

Of the foreign journals related to agricultural economics, 8 duplicate titles costing more than Rs.1000 are subscribed in 2 or more copies. The total cost of single subscription for the 8 journals comes to Rs.60, 458. But the total expense towards subscription of these journals including their duplicate copies is Rs.1, 92, 832. The expense towards subscribing duplicate copies comes to Rs. 1, 34, 374 per year.

## Documents in digital form

The survey revealed the libraries covered have a significant collection of digitized documents and audio visual resources like journals and books in CD-ROMs, back files of abstracting journals in CD-ROM, theses in CD-ROM, video lectures in video tapes, video lectures in CD-ROM, various rare films in tapes and CD, microfilms and fiche, maps, posters etc. Many libraries have also access to online journals and databases kept in the servers of the publishers.

The libraries together have a collection of 876 electronic documents. Theses, reports, maps, microforms, etc. together comes to 3716 documents. The sample libraries subscribe to 8 online journals and databases in total. KAUC has 600 video films on agriculture rfelated areas including agricultural economics, planning and development.

Table 7 – Indian and foreign journals subscribed

| Institution | Indian | Foreign | Total | Cost (Rs. lakhs) |
|---|---|---|---|---|
| CAE | 18 | 10 | 28 | 07 |
| CCBM | 37 | 17 | 54 | 03 |
| CDS | 20 | 21 | 41 | 14 |
| CFISH | 17 | 13 | 30 | 07 |
| COH | 22 | 07 | 29 | 04 |
| DES | 09 | 00 | 09 | 01 |
| IISR | 51 | 40 | 91 | 15 |
| KAUC | 121 | 199 | 320 | 35 |
| KFRI | 46 | 30 | 76 | 14 |
| SPB | 02 | 27 | 29 | 02 |
| Total | 343 | 364 | 707 | 102 |

Table 8 – Details of journals costing more than Rs.25000

| | Title | Institution | Cost |
|---|---|---|---|
| 1 | *Developmental Dynamics* | KAUC | 101087 |
| 2 | *World Development* | CDS | 90017 |
| 3 | *Fish and Fisheries Worldwide* | CFISH | 61000 |
| 4 | *Indian Standards on Food and Agricultural Division* | CFISH | 58000 |
| 5 | *Chinese Economy* | CDS | 55719 |
| 6 | *Journal of Applied Econometrics* | CDS | 53445 |
| 7 | *Journal of International Money and Finance* | KAUC | 46800 |
| 8 | *Journal of Natural Products* | IISR | 31941 |
| 9 | *CMIE Economic Intelligence Service* | SPB | 30000 |
| 10 | *Journal of Agricultural Marketing* | CCBM | 27000 |
| 11 | *Journal of Nutrition* | CFISH | 25195 |
| | Total Cost | | 580204 |

Table 9 – Journals duplicated by selected institutions

| | Title | institution | Cop | Cost | Gross |
|---|---|---|---|---|---|
| 1 | Environmental Conservation (2003) | KAUC, CAE, CFISH, IISR | 4 | 17280 | 69120 |
| 2 | American Journal of Agricultural Economics | KAUC, CDS, COH,IISR, | 4 | 14000 | 56000 |
| 3 | Economic Botany | KAUC, KFRI, COH,CPCRI, IISR | 4 | 5678 | 22712 |
| 4 | Quarterly Journal of Economics | KAUC, CDS, CAE | 2 | 9500 | 19000 |
| 5 | Environmental and Ecological Statistics | KFRI, IISRI | 2 | 5250 | 10500 |
| 6 | Asia Week | CDS, KAUC, CAE | 2 | 4750 | 9500 |
| 7 | Farmer and Parliament | KAUC,IISR | 2 | 2750 | 5500 |
| 8 | Journal of Quantitative Economics | CDS, SPB | 2 | 1250 | 2500 |
| | Total | | 22 | 60458 | 194832 |

## Duplication of databases

Databases in agriculture, and allied areas which also cover agricultural economics is a very valuable category of information resource held by sample institutions. These databases are mainly published in CD-ROM by international organizations or other agencies mainly from foreign countries and are subscribed by only a few of the institutions in agricultural sector. They have also their printed equivalents in full or as different sub subject sets. The major databases that cover agricultural economics also which are subscribed by the sample institutions surveyed are provided in Table 10. Table shows the extent of duplication in subscription to databases in CD-ROM. Against a total of 16 subscriptions costing Rs.46.5 lakhs the libraries received only 9 titles costing Rs.23.4 lakhs. Of these, a total of 7 subscriptions are for duplicate copies.

Duplication of resources worth Rs. 23.12 lakhs is seen. These databases are most important reference sources for agricultural economics. They are costly and consume considerable foreign exchange. All the sample libraries and most of the libraries in agricultural sector require these reference sources. More than two hundred colleges and other institutions in the State teaching economics and agricultural economics also require these resources for their use.

These databases are highly relevant to all the institutions dealing with agricultural economics. But due to their high cost they are not affordable by all. Due to official restrictions and lack of facilities such titles subscribed by a few institutions are not presently accessible to users from other institutions. Of the 10 major institutions covered by this study only 4 are having these resources. And they can individually provide their clientele access to only two or three of these titles subscribed by the concerned institution. By a resource-sharing programme the libraries can subscribe to all the 9 titles at 50% less cost. All the ten institutions will get access to all the 9 titles worth Rs. 23 lakhs as against the present two or three titles .

## Information services

The sample libraries offer different types of services to the students, teaches, scientists, extension workers, administrators and farmers. All the 10 selected libraries follow open access system and provide usual library

Table 10 – Agricultural databases in CD-ROM subscribed in duplicate in Kerala

| Databases in CD-ROM | Institutions | No | Cost | Total Cost |
|---|---|---|---|---|
| AGRICOLA | KAUC | 1 | 24000 | 24000 |
| AGRIS | KAUC | 1 | 30000 | 30000 |
| Current Contents – Agri Biology and Env Sc | KAUC KFRI | 2 | 125000 | 250000 |
| Aquatic Biology, Aquaculture & Fisheries Resources | KAUC,CFIS, | 2 | 175000 | 350000 |
| ASFA -Aquatic Sciences & Fisheries Abstracts: | KAUC, CFIS, | 2 | 215000 | 430000 |
| Biological Abstracts | KAUC | 1 | 225000 | 225000 |
| CAB Abstracts Updates | KAUC, KFRI, IISR | 3 | 250000 | 750000 |
| CAB Abstracts: Archives License:1972-2003 | KAUC, IISR | 2 | 1200000 | 2400000 |
| Tropag & Rural CD. | KFRI, IISR | 2 | 97000 | 194000 |
| | | 16 | 2341000 | 4653000 |

services like reference, loan, photocopying and selective dissemination of information (SDI) in an informal way. They also provide various types of current awareness services (CAS), bibliographic services, etc.

## Resource sharing facilities

The survey revealed that no resource sharing programmes exist among any group of libraries functioning in the agricultural sector of Kerala including the sample libraries. All the sample libraries have reported that they do not facilitate use of books, papers, journals, dissertations or databases in CD-ROM to other institutions. They are not participating in any resource sharing or networking activity like cooperative acquisition, cooperative cataloguing, common storage, cooperative conservation activities, cooperative technical processing, interlibrary loans, etc. This reveals that the rich resources available in the institutions are not being used beyond a small group inside each institution. The State fails to extract even minimum utility of the costly information resources built up in the major libraries.

## Need for resource sharing

There is substantial duplication of costly resources like reference books, journals and databases. Different institutions subscribing to the same journal and database titles have similar functions which require those resources. But these items are very costly and their prices are going up year after year. More than that they utilize the foreign exchange too. Library budget shrinks year after year making even the journals and databases subscribed the previous year out of reach in the current year. But number of journals and databases reporting research and development in agriculture are increasing day by day. In such circumstances it is very important to examine critically each and every costly title subscribed in more than one institution in the State. A resource-sharing programme, which may not cause any loss to available information service facilities, is to be devised. Unless such a resource-sharing programme is implemented even with improved allotment for journals and databases, the institutions cannot continue all titles subscribed at present.

The duplication has become necessary because each institution operates in isolation and they attempt to become self-reliant in providing information support to its users. But in these days of information explosion, flooding of documents and use of different media and methods for information recording, storage and dissemination, self reliance is only a myth. Thus instead of spending such huge amount for duplication, the institutions can come to an agreement on cooperation for use of the journals and databases.

## Conclusion

An analysis of the information resources available at the libraries of ten major institutions studied in comparison reveals that the resources at the disposal of the institutions taken together are sufficient for reliable services in agricultural economics. But when individual libraries are considered, the resources at their disposal are not adequate, full or reliable. The libraries also face various constraints in providing efficient information services. Most of the collections are not scientifically organized. There is no standardization in cataloguing and classification. There is no provision for those in any institution to access the information stored in other resource rich institutions for the sake of the farming community.

Based on the study, it is recommended that a resource sharing programme for agricultural economics with regard costly reference sources, journal subscription and specialized databases which can contribute to maximizing the utility of resources at our disposal should be initiated. CDS or CCBM having major resources on the area should take up the leadership role for this porgramme. Establishment of such a system can enable the development of information systems in institutions on a uniform pattern and their successful coordination at state level for resource sharing, efficiency, cost effectiveness and reliability. Teaching, learning and research on agricultural economics conducted at universities and colleges also will be benefited by such a network which can be made accessible to them also. The optimum utility of available information resources can be extracted under such a resource sharing programme for agricultural economics.

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