Information needs and information seeking behaviour of library users in the AGRINET

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Abstract

A survey was carried out to ascertain information needs and information seeking behaviour of the users of libraries participating in the AGRINET. A mailed questionnaire with structured and open-ended questions was used as the research instrument. The results revealed that agricultural scientists in Sri Lanka were actively engaged in research work. Teaching/training, management/administration, and extension were the other main functions they performed. Their primary areas of research interests were centered on their fields of specialization. Plant protection, plant breeding and plant sciences were their main subject specialization. The main purposes of seeking information by agricultural scientists were to support research work in progress and to keep pace with the latest developments in their fields of interests. The main current awareness and search techniques used to learn about new publications were literature searching, SDI service, library indexes and acquisition lists of the libraries. Due to lack of facilities to access Internet it was considered as the least important current awareness service. The agricultural scientists in Sri Lanka were heavily dependent on formal sources compared to informal sources. The formal sources such as; periodicals/journals, abstracting and indexing journals and books are still popular among agricultural scientists as sources of information in all three approaches; to keep up with current developments, for specific search and for comprehensive search. The major problem faced by agricultural scientists in seeking information was the inadequacy of information sources in their libraries. Incompleteness of journals/periodicals, Outdateness of books and journals, non-availability of important bibliographic and reference tools were considered major shortcomings of these libraries. The results also revealed that newly introduced information sources such as CD-ROM databases, databases on disk, online databases had been popular among agricultural scientists in the country. Of these three information media, 43.8% of respondents had used CD-ROM databases followed by 22.8%, databases on disk and 13.3%, online databases. The results indicated that the AGRINET services had not been totally used by its users and they were unaware of the important services provided by the AGRINET, the sole network of agricultural libraries in Sri Lanka.

Keywords: User studies, Information needs, Information seeking behaviour, Agriculture Scientists, Sri Lanka

Introduction

The rapid growth of scientific investigations in the world has led to an enormous output of information, which is referred to as *Information explosion*. Information has to be captured and made available to those who need it at the appropriate time in order to avoid unwanted duplication and repetition of endeavors, which leads to wastage of resources.

In order to provide unique service to users, librarians have to be pro-active, anticipative and responsive. Through pro-activeness they would be able to identify needs and requirements and provide the services accordingly. This paved the way to carry out empirical studies of users, which is known as "information needs and use studies" or "user studies".

According to Elayyan (1988) use studies are studies of the flow of information or the process of information use.

A survey was carried out to ascertain information needs and information seeking behaviour of the users participating in the AGRINET, the only network available to agricultural libraries in Sri Lanka.

Objectives of the study

The objectives of the study include the following;

1. To identify the information needs of the users, in terms of their;
- Subject specialization
- Areas of research interests
2. To identify the information seeking behaviour in terms of;
- Purpose for seeking
- Utilization of sources and type of information
- Problems and methods of satisfaction of needs
3. To assess the AGRINET services
4. To investigate whether introduction of IT (Information Technology) has any impact on information seeking behaviour of users.

Hypothesis

1. After the previous study of I. Mudannayake in (1987) due to the changes in the political, economical and social factors the information needs of the AGRINET users in Sri Lanka may have changed.
2. Introduction of information Technology (IT) to libraries would have caused changes in information seeking behaviour of users.
3. As a result of the introduction of new information services by the AGRINET, the utilization of library services had increased.

Methodology

Respondents of the study
The users of AGRINET (Agriculture Information Network) member libraries were taken as the respondents of the study. AGRINET, which was founded in 1984 to promote sharing and developing resources in agriculture libraries, includes 28 institutions interested in agriculture. Respondents were identified from the updated AGRINET User Database obtained by the CARP, the co-coordinating center of the AGRINET. Out of the total population of 460 users, a sample of 196 respondents was selected according to the stratified random sampling technique.

Research Methodology
The survey method was used to find out the needs and seeking behaviour of the users. A mailed questionnaire with structured and open-ended questions was used as the research instrument.

Data gathering
One hundred and ninety six questionnaires were distributed among the respondents. Out of the total questionnaire distributed, 105 (53.6%) were returned from 21 institutions. The institutions, included in the study, were categorized in to 3 major groups, the government, the semi government and the academic institutions for easy comparison of the findings.

Table 1. Distribution of questionnaire

Category of Institution	No of ques. sent	%	No of ques. received	%	Response rate
Government institutions	32	16.3	24	22.9	75.0
Semi-government institutions	98	50.0	52	49.5	53.0
Academicnstitutions	66	33.6	29	27.6	43.9

Data analysis

Descriptive statistical methods were applied to analyze the data. For general questions the frequencies and percentages were calculated to interpret findings. For all ranking questions the method of Kendall's co-efficient of concordance, "W " was employed to evaluate the results. Chi Square test was used to test the significance of the value of "W".

For statistical analysis the computer based statistical package "Statistica" was used.

Results and Discussion

Category of Work

Information requirements of the respondents varied according to their fields of work. The results showed that 91.4% of respondents were actively engaged in research, while 58.0% were engaged in teaching and training. Some 31.4% were engaged in extension works. Least percentage of respondents (29.5) were involved in management/administration tasks. As Mudannayake found in 1987, the results showed that almost all agriculture scientists in Sri Lanka are actively engaged in research.

The results revealed that the category of work of respondents was heavily dependent on the functions of their institutions. The respondents in the government institutions were engaged in teaching and training (58.3%), in addition to research. They involved in management/administration (45.8%) than extension work (33.3%). In contrast, the respondents in semi-government institutions were engaged in teaching and training (34.6%) and extension work (34.6%) than administration/ management work (26.9%). The academics were mainly engaged in teaching and training (100.0%) while 96.5% were engaged in research. A few number was engaged in management/administration work (20.6%) and extension tasks (13.7%).

Table 2. Category of work of respondents*

Category of work	G.I. (N=24)		S.G.I. (N= 52)		A.I. (N=29)		Total (N=105)	
	F	%	F	%	F	%	F	%
Management/Admin.	11	45.8	14	26.9	6	20.6	31	29.5
Research	21	87.5	46	88.4	28	96.5	96	91.4
Teaching/Training	14	58.3	18	34.6	29	100.0	61	58.0
Extension	8	33.3	18	34.6	4	13.7	33	31.4

*Multiple responses were allowed

Subject specialization of respondents

The respondents were asked to indicate their subject specialization; research interests to get details for the construction of information need profile. Out of total 105 respondents 20.0 % were specialized in plant protection, 17.1% in plant breeding, 9.5% in plant science and soil science. The areas, which had a low numbers of specialists, were rural sociology, meteorology/climatology, agricultural extension, farm management and pollution (0.9% each). The other subjects fell in between these two ranges.

Areas of research interests

The results revealed that the largest number of respondents (23.7%) were interested in plant science research. This was followed by respondents interested in plant protection (20.3%), plant breeding (17.1%), agricultural economics (9.2%), soil science and forestry/agroforestry (7.9%) and food science (7.2%). The subjects, that were of interest to limited number of users, were rural sociology, farm organization, agricultural extension, agricultural engineering, statistics/biometry and computer science (1.3% each).

The new subjects such as biotechnology, forestry/agro-forestry, computer science and molecular biology were indicated as their subject interests, which were not shown in the study of Mudannayake in 1987. This supports the first hypothesis defined by the researcher that the economic, political and social factors could cause changes in information needs of the AGRNET users.

Information seeking behaviour

Information seeking behaviour refers to why and how an individual behaves in fulfilling his information needs. This includes the purpose for seeking information, the methods of obtaining information tools and sources, and the library services that uses to satisfy the needs.

Purpose for seeking information

The respondents were asked to rank (in descending order of importance) the given 6 purposes for which they usually sought information. " To support research work in progress" was ranked first by both respondents in government and semi-government institutions, while the respondents of academic institutions ranked " To keep up to date in current developments in subject areas" as their main purpose for which they seek information. This purpose was ranked second by the respondents in both government and semi-government institutions while the academics were given their second preference for "To support research work in progress".

All respondents ranked "To develop competence" as the third important purpose for which they seek information. Except the respondents of the government institutions, all respondents gave their forth preference to the option" To develop educational materials for teaching where the respondents of government institutions gave their sixth or the least preference. The respondents in government institutions ranked "To carry out extension work " as the forth important function, which accorded the fifth place by the respondents of both academic and semi-government institutions. The lowest priority was given to "To carry out administration/management tasks" by respondents of both semi-government and academic institutions while the respondents of government institution gave the least priority for the purpose of " To develop educational materials for teaching". In order to test the validity of the findings, method of Kendall's co-efficient of concordance "W" value was employed. The value obtained was 0.898, which indicated that there is an excellent agreement among the respondents in ranking the given six purposes. The findings confirmed that the respondents need a steady flow of latest information relating to their current research interest and to keep up to date with current development in their fields of interests.

Use of current awareness and search tools

The respondents were asked to rank the given eight sources of information to determine their usefulness in current awareness. According to the findings "literature searching" was considered as the main method of current awareness by the majority of respondents in government as well as academic institutions. The respondents in semi-government institutions ranked " new acquisition lists prepared by their libraries" as the most important method of current awareness which was followed by "SDI service", "library indexes". Respondents in all three categories of institutions

considered "Internet searches" as the least important search tool for current awareness. This may be due to lack of facilities for Internet searches in their work places.

In contrast to the findings of Mudannayake (1989) the new information media were more popular than the printed acquisition lists to the respondents of libraries of the government as well as academic institutions.

When the results were subjected to statistical analysis the "W" value obtained was 0.133, which was not significant at 0.05 level. This implies that there was no correlation in ranking different current awareness tools by the different categories of respondents. This may be due to the non-uniformity of the sources as well as the services provided by the libraries of different institutions. But majority of respondents considered literature searches as an important source of current awareness tool, which proves the second hypothesis, that the introduction of IT to agricultural libraries would have caused changes in the information seeking behaviour of the AGRINET users.

Purposes and sources of information
Scientists need information for three main purposes; to keep up to date, for a specific research or for a comprehensive search. Different sources are used to fulfill different purposes.

The respondents were asked to indicate and rank the relevant information sources, which were used to satisfy different purposes mentioned above.

The results showed that all respondents ranked periodicals/journals as the most important source used in all three approaches. Abstracting and indexing journals were accorded second preference in the approach "To keep up to date" and for a Comprehensive search. For a specific search respondents ranked CD-ROM as the second important source of information. Internet searches, seminar/meetings and information from peers were ranked as least important sources of information when all three purposes are concerned. The books accorded the third important source of information for the purpose of " to keep up to date" and for other two approaches it accorded forth place. This implied that our scientists still rely much on printed sources instead of electronic as well as other informal sources of information.

These findings are in agreement with those of Mudannayake(1989) that the Sri Lankan agricultural scientists heavily dependent on formal sources compared to informal sources.
As the "W" value obtained was 0.909, high correlation was observed in ranking different sources used in different approaches.

Shortcomings in agricultural libraries
No single library is self-sufficient with all needs of its clientele. Due to reduction of financial allocations as well as skyrocketing of the prices of information sources, libraries are confronted with various shortcomings in acquiring information.

The respondents were asked to rank the identified major shortcomings in relation to their libraries. The respondents in all three categories of institutions ranked incomplete sets of periodicals/journals as the main shortcoming that they are confronted within their libraries.

Non-availability of important reference material was considered as the second most important problem prevailing in the libraries of both academic and semi-government institutions while the respondents of government institutions ranked outdateness of books and journals as the second most important problem. "Inadequate attention of library staff" was ranked as the least important problem confronted

by respondents in all three categories of institutions. When the results were subjected to statistical analysis the "W" value obtained was 0.6487, which is not significant at 0.05 level. That means there was no correlation among the ranking of problems by the respondents.

Usage of modern telecommunication techniques and information sources

Respondents were asked to indicate their usage of Internet facility, E-mail and fax in information seeking. Out of the total 47.6% used e-mail followed by 44.7% fax. Lowest (21.9%) used Internet facility. The usage of these facilities was high in academic institutions as well as in semi-government institutions. The government institutions, which had more remote rearch stations, had less use of these facilities.

Only 46 respondents (43.8%) indicated that they used CD-ROM databases followed by 22.8% and 13.8% databases on disks and online databases respectively. The results showed that the newly introduced modern information media and telecommunication techniques were popular among agricultural scientists in Sri Lanka. The results also revealed that these facilities were more frequently used by the respondents of academic and semi-government institutions than government institutions since they are more equipped.

Table 3. Usage of modern telecommunication techniques and information media *

	G.I. N=24		S.G.I. N=52		A.I. N=29		Total N=105	
	F	%	F	%	F	%	F	%
Internet	4	16.6	8	15.3	11	37.9	23	21.9
E-mail	7	29.1	31	59.6	12	41.3	50	47.6
Fax	11	45.8	24	46.1	12	41.4	47	44.2
CD-ROM databases	9	37.5	24	46.1	13	44.8	46	43.8
On line databases	2	8.3	7	13.4	5	17.2	14	13.3
Databases on disks	6	25.0	9	17.3	9	31.6	24	22.8

* Multiple responses were allowed

Evaluation of AGRINET services

AGRINET is the only network active among agricultural libraries in Sri Lanka. It offered various services to its member libraries to disseminate information among agricultural scientists.

Respondents were asked to evaluate the services offered by the AGRINET. Out of the five main services 52.3% of respondents had used inter library loan service and 45.7% had used SDCP service (Selective Dissemination of Contents Pages Service). Some 41.9% of respondents used literature searching while 42.0% used the photocopy service. The least number of respondents (25.7%) attended AGRINET user seminars. The results indicated that the AGRINET services are not fully utilized by its users and the users are unaware of the important services rendered by the AGRINET.

Conclusions

Based on the results, following conclusions can be drawn:

1. The agricultural scientists in Sri Lanka were actively engaged in research work. Teaching and training, management/administration and extension service were their other category of works that they performed.
2. Plant science, plant protection, plants breeding were the main research interests as well as their subject specialization.
3. Biotechnology, forestry/agro-forestry, computer science and molecular biology were the new subject interests of respondents.

4. The main purpose for seeking information by agriculture scientists in Sri Lanka was "to support research work in progress" and "to keep up to date with current developments in their subjects interests ".

5. The main current awareness service and finding tools used by the respondents were literature searching, SDI service and the library indexes prepared by their libraries. Newly introduced information services are more popular than the traditional sources as current awareness tools.

6. The agricultural scientists in Sri Lanka were heavily dependent on formal sources of information such as periodicals/journals, indexing/abstracting journals and books available in their libraries than informal sources.

7. The major problems encountered by the agriculture scientists in the country were the non-availability of complete sets of journals/periodicals, out dateness of books and periodicals and the non-availability of reference materials and bibliographic tools in their libraries.

8. Inter library loan service, SDCP service and the photocopy service of the AGRINET were considered as the most important services rendered by the AGRINET.

Recommendations

- As the information needs of the AGRINET users are changing regularly, an island wide user study should be done at least once in three years in the field of agriculture in order to identify information needs.

- According to the findings, libraries have to develop their collection accordingly as new subject areas are emerging.

- As the newly introduced IT media are becoming more popular among users, the libraries have to take steps to acquire those facilities as well as to strengthen the already available facilities.

- Libraries should have more orientation programs to educate users how to use new IT technologies as some users indicated that even though the IT facilities are available in their libraries, they did not use due to lack of knowledge.

- AGRINET should take steps to popularize its existing services among participating libraries to provide better services to its users.

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