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Assessing the Library and Information Services for Strengthening Agricultural Information Delivery System: A Case Study on NARS Libraries

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ABSTRACT

The investigator evaluates the present information services of the National Agricultural Research System (NARS) libraries in Bangladesh. Agricultural development is dependent to some extent on scientific services provided by NARS library and information professionals. The present study is a case study in nature. Judgmental random sampling was used to collect the data from the library professionals and staff and library users. Two sets of semi-structured questionnaire were distributed among them. Besides, field visit, interviews and FGDs were employed in the study to find the qualitative results. The existing facilities, strength, and weakness of agricultural information services are identified in the study. The survey result indicates that the respondents desire for improving the quality of information services in the NARS libraries and information center. The study ended with recommendations for making the libraries digitally automated having ample internet facilities.

Keywords: Information services, Agriculture research, Information centers, NARS, Bangladesh

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1. INTRODUCTION

Agricultural development is very much dependent on technological support. So far the National Agricultural Research System **(**NARS) has developed huge number of production technology from research generated endeavor. As a result of the application of technology, foodgrain production has tripled during the last three decades and production of fruits, vegetables, pulses, oilseed also increased significantly. Modern production technologies, both variety and management based were transferred to extension departments for their dissemination to farmers.

Under the newer challenges, like population growth, lack of agricultural land due to urbanization, climate change, degradation or loss of bio diversity, agricultural production system is being threatened. Also potential exists in the science technology in Bangladesh like ICT and global knowledge on

information management. Keeping this in view, the agricultural research system has to be re-organized to accelerate knowledge transfer through advanced knowledge of information management. To improve support for continued quality research the scientific community also needs variety of information from home and abroad. Therefore, timely delivery of this information, although a bit complex task, has been ever demanding.

Agriculture information is the kind of information which is needed for the development of agricultural research extension and education (Uddin, 2002). There are four main categories of agricultural information namely, technical/scientific, commercial, social and legal (Aina, 1996). The meaning of "information systems" has been growing in diversity and complexity. Several authors have pointed out this fact, described the phenomena and tried to bring some order to the perceived chaos in the field. As an example of this chaos and disorder, 'misunderstandings of the nature of information systems' and the 'limitations of existing frameworks for defining information systems' are added to the existing ones by (Cohen, 2000).

Information systems are the means by which people and organizations utilize technologies, gather, process, store, use and disseminate information. The development of databases and the information systems relating to these would require inputs from various sources, and their processing and timely dissemination are useful for the planners, policy makers, development practitioners, research, administration and other co-coordinating agencies. The present study is designed to identify the existing information services and facilities available in the National Agricultural Research System **(**NARS). There were 10 NARS Institutes and one apex body in Bangladesh. The shows the name, establishment time and the location of these NARS and BARC (Appendix 1). Bangladesh Jute Research Institute (BJRI) established in 1952 is the pioneer of all research systems. Later on, Cotton Development Board (CDB) established in 1991 and Bangladesh Sericulture Research and Training Institute (BSRTI) established in 1962 have been added to the NARS group. The present study aims to identify the information requirement of the scientists and professionals working in these research institutes. Lastly it also strongly highlights some important notes for the sustainable improvement of the information services in those systems.

2. LITERATURE REVIEW

Information service in agriculture is an important factor that is directly and indirectly interacted with production. Mannan & Ahmed (1994) observed that there is an urgent need of establishing a network of libraries, documentation and information centers dealing with rural development research. Kaur (1995) analyzed the concept and described the growth of information services. The researcher also discussed development of agricultural information services in India. Wahab (1995) highlighted the information needs of the teachers of the Bangladesh Agricultural University (BAU). He identified the areas of satisfaction of the teachers and mentioned some problems, which made obstacles to provide better services to them. Ortiz (1997) analyzed an agricultural knowledge and information system and researched the dissemination of integrated pest management related information among research, extension and potato producers in Peru. Islam (1998) explored library, documentation, publication and

also audio-visuals with the explanation of various types of agricultural information services provided by the agricultural libraries in Bangladesh. In this context, up-to-date information was collected from quality research for the overall development of not only agricultural sector but also other sectors of Bangladesh. Uddin (2000) evaluated the services offered by the agricultural libraries in Mymensingh. In this regard, some suggestions were proposed for further development of the agricultural libraries in Mymensingh. The present status of information services in the libraries of agricultural scientists and research organizations has also been depicted by the researcher. Singh & Satija (2007) conducted research on information seeking behaviour of agricultural scientists working in the ICAR institutions of Delhi and Punjab Agricultural University, Ludhiana. There is low demand for current information and the majority of the academic community is not frequent users of information (Mannan & Bose, 1998). Moreover, Islam & Hoq (2010) asserted that the rural communities have different needs for information depending upon their functions, responsibilities, and duties. Different community information centres are meeting up these demands through the provision of information services. NARS libraries and BARC information center serve rural farmers providing information about the cultivation of different crops, fisheries and livestock.

3. MATERIAL AND METHODS

The study considered the functions, activities, operations, services and usefulness of the users of information center and libraries in the National Agricultural Research System. So, it employed a mixed method approach- quantitative through questionnaire and qualitative through interviews, observation. The library staff, officers of information centers and the users were the study respondents. Judgmental sampling was used in the survey with a view to select the data from the respondents based on their knowledge and professional judgment. Two sets of questionnaire were distributed among the respondents to collect the primary data on which the result of study much depended. The sample size was medium and it was confined to 194 users and 98 librarians and information officers. The library users include agricultural scientists of different departments. The frequency and the percentage of the respondents of libraries/information center are presented in the table 1.

Table 1: Frequency distribution of librarians and information officers and users

Institute	Frequency (Librarian)	%	Frequency (Users)	%
BARC	8	8.2	27	14
BARI	9	9.2	17	8
BRRI	13	13.3	19	10
BJRI	11	11.2	17	8
BINA	6	6.1	16	8
SRDI	11	11.2	13	7
BSRI	7	7.1	19	10
BLRI	3	3.1	17	8
BFRI(Forest)	16	16.3	17	8
BFRI(Fisheries)	10	10.2	19	10
BTRI	4	4.1	13	7
Total	98	100	194	100

3. RESULTS AND DISCUSSION

The number and the qualification of the staff of a library is an important factor to the delivery of the services. Table 2 shows the strength of staff of the NARS libraries and information center. BFRI (Forest) has the highest number (16.3%) of total staff involved in the surveyed libraries and information center. Next BRRI has 13.3% staff. The lowest number of staff is found in the BLRI (3.1%).

In terms of quality of the staff, BARI has the highest (16%) number of professional staff in library. On the other hand, SRDI, BLRI and BTRI are facilitated with the least professional staff (4%). In case of semi-professional, BFRI (Fishery) scores the highest (12.5%) but in case of non- professional, BFRI (Forestry) scores the highest (28%).

Table 2: Frequency distribution of library staff & information provider

Institute	Strength of Library Staff (No.)			Strength of Information Provider (No.)		
	Professional	Semi - professional	Non-professional	Professional	Semi-professional	Non-professional
BARC	2	0	2	4	0	0
BARI	4	0	3	0	0	2
BRRI	3	1	4	3	1	1
BJRI	2	1	3	1	1	2
BINA	3	0	2	1	0	0
SRDI	1	1	1	1	0	9
BSRI	3	1	1	2	0	0
BLRI	1	0	1	1	0	0
BFRI	2	0	6	2	6	0
BFRI	3	2	2	2	1	0
BTRI	1	0	3	0	0	0

Table 3 represents the types of library service delivery and the status of library statistics. Only BARC and SRDI maintain automation in cataloguing and rest 09 libraries have card form which is old system. It shows that the system needs to be changed with the experience of BARC and SRDI. The statistics of the information materials are maintained in most of the libraries while three libraries do not maintain statistics. The libraries that do not maintain statistics are BJRI, SRDI and BTRI. For the sake of better service and discipline the three libraries should start statistics of library.

Table 3: Types of catalogue and status of library statistics

Name of the Institute	Catalogue	Maintaining Library Statistics (Y/N)
BARC	Automated	Yes
BARI	Card form	Yes
BRRI	Card form	Yes
BJRI	Card form	No
BINA	Card form	Yes
SRDI	Both	No
BSRI	Card form	Yes
BLRI	Card form	Yes
BFRI (Forest)	Card form	Yes

BFRI (Fisheries)	Card form	Yes
BTRI	Card form	No

The table 4 shows qualitative description of the NARS libraries. Surprisingly it is noticed that only BRRI library stated as sufficient in terms of staff while the rest have insufficient staff. In lack of manpower has been cited as the major reason for insufficient service of the library. However, inadequate financial allocation is the reason behind the smooth function of the libraries. Lack of manpower was also found as the major reason for insufficient service of the library. BARC is the apex body of NARS under which 10 organizations are associated in a group. The collection of the center is diversified & the users are also of different portfolio. The users' demand need to be fulfilled serving from full text database. That requires much afford and time. BARI runs and manages the library smoothly. It provides improved library services to the researchers with databases, strengthening exchange and complementary programme.

Table 4: Staff status and its reasons behind smooth service

Institute	Stuff	Reasons behind Smooth Service
BARC	Insufficient	a number of collection & many users
BARI	Insufficient	No response
BRRI	Sufficient	Not Applicable
BJRI	Insufficient	Lack of manpower
BINA	Insufficient	Lack of manpower
SRDI	Insufficient	not cover the total service of library
BSRI	Insufficient	Lack of manpower
BLRI	Insufficient	Insufficient manpower
BFRI	Insufficient	No response
BFRI	Insufficient	inadequate manpower & finance
BTRI	Insufficient	Not Applicable

NARS libraries are used by the agricultural scientists, students and others. Figure 1 shows that BARC library is used more than any other libraries. This is because the library is located in the heart of the city and near the Shere Bangla agricultural university. The library used in the least amount is the BTRI. It may be mentioned that BTRI is the smallest research institute in terms of number of scientists which is located in the Upazilla of Maulivibazar. BARC library is used more frequently by average 62 persons per day and BSRI is also visited by 60 persons per day. BTRI library is used less.

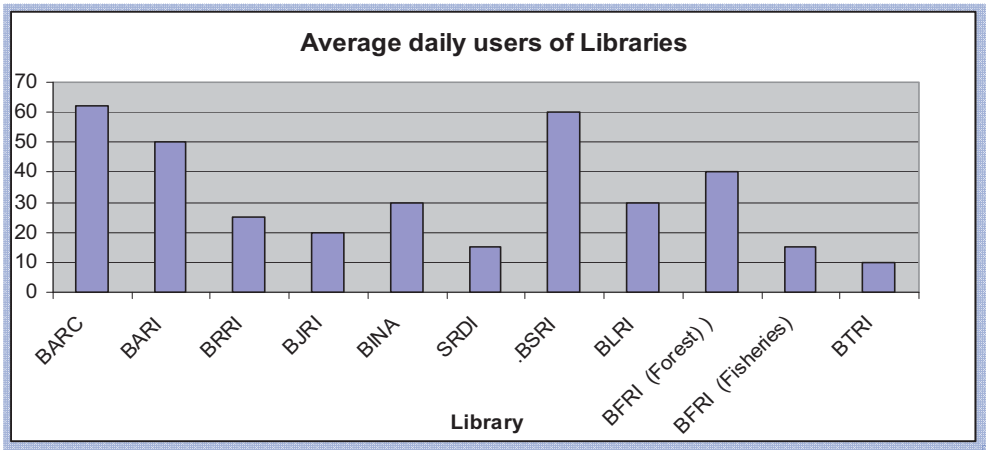

Figure 1. Inadequacy of library and information center visit

The stock of books for research work has been shown in figure 2. About 37% of the total respondents have opined that the book stock is not adequate to meet the demand of the respondents while 28% opined adequate. However, institute wise picture is different. BRRI respondents opined satisfaction as adequate (68%) while respondents of SRDI opined as inadequate.

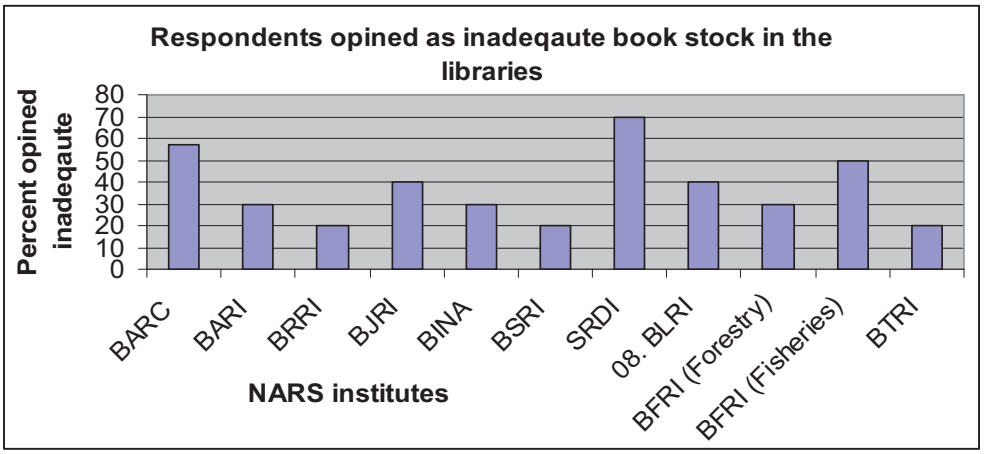

Figure 2. Inadequacy of Book Stock in the Library and information centers

The stock of periodical for research work has been displayed in the Table 5. About 40% of the total respondents have opined that the stock of periodical is not adequate to meet the demand of the respondents while 35% opined adequate. However institute wise picture is different. BRRI respondents opined satisfaction as adequate (70%) while respondents of BINA, BSRI, SRDI, BLRI and BTRI opined as inadequate.

Table 5: Stocks of periodicals for research work

Name of the Institute	Inadequate	Adequate	Fairly Adequate
BARC	70.00	20.00	10.00
BARI	12.50	25.00	62.50
BRRI	10.00	70.00	20.00
BJRI	50.00	20.00	30.00
BINA	20.00	10.00	70.00
BSRI	75.00	10.00	15.00
SRDI	70.00	10.00	20.00
BLRI	30.00	10.00	60.00
BFRI (Forestry)	30.00	30.00	40.00
BFRI (Fisheries)	30.00	20.00	50.00
BTRI	40.00	10.00	50.00
Average	39.77	21.36	38.86

Average 42% respondents think that existing agricultural information services for profession work are sufficient and 46% insufficient (Table 6). To meet information needs from professional colleagues 47% come from home, 31.5% abroad and 21.5% from the both.

Table 6: Adequacy of Information Materials (%)

Institute	Sufficiency Bar of Information Sources			Location		
	Sufficient	Mod. Sufficient	Insufficient	Home	Abroad	Both
BARC	6.67	33.33	60.00	60.00	16.67	23.33
BARI	10.00	47.50	42.50	52.50	25.00	22.50
BRRI	12.50	42.50	45.00	57.50	30.00	12.50
BJRI	30.00	40.00	30.00	20.00	40.00	40.00
BSRI	20.00	50.00	30.00	20.00	50.00	30.00
BINA	5.00	35.00	60.00	30.00	60.00	10.00
BFRI	10.00	30.00	60.00	20.00	50.00	30.00
BLRI	20.00	60.00	20.00	60.00	20.00	20.00
BFRI	10.00	80.00	10.00	70.00	10.00	20.00
SRDI	10.00	30.00	60.00	40.00	30.00	30.00
BTRI	20.00	10.00	70.00	30.00	40.00	30.00
Average	12	41.5	46.5	47.00	31.50	21.50

Table 7 shows that two NARS institutes are run by the government and the rest are autonomous. All the libraries have replied positively in the field of computerization and using interest. A healthy amount of response is collected about the materialization of the library computerization process. Average14.5% respondents have opposed the idea.

Table 7: Computerization and Internet of library and information center

Institute	Computerization	Having Internet	Browsing Internet

	Yes	No	Yes	No	Yes	No
BARC (Autonomous)	93.33	6.67	93.33	6.67	86.67	13.33
BARI (Autonomous)	87.50	12.50	87.50	12.50	77.50	22.50
BRRI (Autonomous)	90.00	10.00	90.00	10.00	70.00	30.00
BJRI (Autonomous)	70.00	30.00	70.00	30.00	50.00	50.00
BINA (Autonomous)	80.00	20.00	80.00	20.00	60.00	40.00
BSRI (Autonomous)	85.00	15.00	85.00	15.00	70.00	30.00
SRDI (Government)	90.00	10.00	90.00	10.00	60.00	40.00
BLRI (Autonomous)	80.00	20.00	80.00	20.00	70.00	30.00
BFRI (Government)	90.00	10.00	90.00	10.00	50.00	50.00
BFRI (Autonomous)	70.00	30.00	70.00	30.00	50.00	50.00
BTRI (Autonomous)	70.00	30.00	70.00	30.00	60.00	40.00
Average	85.5	14.5	85.5	14.5	69.5	30.5

All the libraries should have internet facilities. Only few respondents voted negatively. Their percentage is only 14.5%. In the field of browsing facilities about 70% respondents have nodded by 'yes' and 30% by 'no'.

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4. APPENDIX 1

Name of the Library	Year	Location
Agricultural Information Centre (AIC) of (BARC)	1973	Dhaka
Bangladesh Agricultural Research Institute (BARI)	1970	Gazipur
Bangladesh Rice Research Institute (BRRI)	1970	Gazipur
Bangladesh Jute Research Institute (BJRI)	1951	Dhaka
Bangladesh Institute Nuclear Agriculture (BINA)	1973	Mymnesigh
Soil Resource Development Institute (SRDI)	1962	Dhaka
Bangladesh Sugarcane Research Institute (BSRI)	1974	Ishurdi
Bangladesh Livestock Research Institute (BLRI)	1986	Savar
Bangladesh Forest Research Institute (BFRI)	1955	Chittagong
Bangladesh Fisheries Research Institute (BFRI)	1987	Mymensigh
Bangladesh Tea Research Institute (BTRI)	1957	Srimangal