Factors Militating Against Utilization of Information Resources for Research by Scientists in Agricultural Research Institutes in Nigeria

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ABSTRACT

This paper was designed to investigate factors militating against utilization of information resources for research by scientists in Agricultural Research Institutes in Nigeria. The descriptive survey research design was used for the research. The population of the study was 1002 from which 200 was sampled using certified proportionate sampling technique where 20% of the respondents from each research institute was elected for the actual study. The questionnaire and observation were instruments used for collecting required data. Data gathered was organised according to research questions. The findings of the study showed that majority of the agricultural scientists rated the use of internet services/materials/documents and conference proceedings, among others, respectively between average and very high extent for their research. On the other hand, majority of the scientists rated utilization of encyclopaedias and memos, among others respectively, between low and very low extent for their research purposes. The findings also revealed that lack of enough qualified and experienced librarians to provide, process, and make available library information resources and services, inadequate funding of the libraries and lack of adequate information resources were militating factors against utilization of information resources for research among others. The study recommended that the Federal Government should improve funding to all Agricultural Research Institutes with a directive that 20% of such allocations be used for the development of research libraries, among others.

I.   Introduction

In Nigeria, Agricultural Research Institutes (ARIs) are designated institutions established by the Federal Government to undertake research into various aspects of agriculture. These are in the areas of modern methods of farming so as to satisfy the food and industrial needs of the country, production of appropriate chemicals to combat crop and animal diseases and development of seeds and animal varieties that could aid high yield of agricultural products. In order to achieve the objectives for which they were established, management of each research institute foresaw the need to establish a library so as to provide information resources and services that could meet with the information needs of agricultural scientists.

Libraries established in ARIs are invariably referred to as either special or research libraries. According to Edoka

in Bitagi (2014a), these libraries exist to further the research activities of their sponsoring organizations and provide information resources and services which are of direct relevance to the interest and activities of the body. It therefore, becomes imperative that ARI libraries must perform specific functions such as provision of comprehensive and balanced information resources and services relevant to all fields of specialization of the institutes, produce and disseminate current awareness services based on the profiles of each scientist and provide needed information as quickly and precisely as possible in order to save the time of the user.

Information resources are all the library materials or facilities which the librarians rely upon to provide information services that meet with the information needs of the agricultural scientists. Information resources include those that are classified into print such as journals, textbooks, technical reports, theses and dissertations etc and non-print which include computers,

satellite operations, internet, databases and all related electronic gadgets that store or provide information that satisfy the information needs of agricultural scientists. In their view, Elaturoti and Oniyide (2003) also identified information resources as those print and non-print materials that are selected specifically and organized for implementing the educational programme at all levels of education. Okpeke and Odunlade (2014) corroborated the above views when they opined that information resources can be described as including any information in electronic, audio visual or physical form, or any hardware or software that makes possible the storage and use of information.

Utilization of information resources refers to the extent to which the available information resources are used by the agricultural scientists for the purpose of satisfying their information needs in the quest to undertake research in agriculture. It is therefore, imperative for the scientists to make maximum utilization of the available information resources to ease the performance of their duties as prescribed and assigned. It could however, be assumed that inadequate supply of current and relevant information resources could be a major militating factor in the utilization of information resources by the scientists. In addition to that, Okpeke and Odunlade (2014) argued that effective utilization of information resources is hinged on awareness of the existence of a particular resource required to meet one's information need(s). That suggests that the librarians, who are the custodians of these resources have a lot to do in order to make available resources known to the users.

Agriculture has to do with farming in general terms. In the context of this research, it is a profession of those who specialize in farming and husbandry. It therefore means the cultivation of animals, plants, fungi and other things for food, fibre, bio-fuel and other products used to sustain human life. Iwena (2008) corroborates this argument when the author observed that agriculture is the deliberate effort made by man to till the soil, cultivate crops and rear animals for food and other purposes.

Generally, a scientist is a person who has specialized in one area of science, or the other through training. Parker (2002) defines scientist as a person having the training ability and desire to seek new knowledge, new principles and new materials in some fields of science. By this definition and in the context of this research, agricultural scientist is a person who has acquired requisite training in any of the agricultural disciplines who is willing to seek new knowledge, principles, and materials in order to explore modern methods of farming, production of appropriate chemicals and seed varieties that could enhance agricultural production in Nigeria. Such scientist must therefore, have a minimum educational qualification of a first degree and is employed in any of the ARIs in Nigeria for the purpose of undertaking research in any of the agricultural field.

The concept of research has been defined in a variety of ways. In relation to this study however, Ifidon and Ifidon (2007) defined research as man's systematic and empirical investigation into existing but hidden elements in nature with the view to unearthing, restructuring and explaining such elements for the purpose of development. Bitagi (2014b) was however, of the view that irrespective of the way and manner research is defined, it has to do with finding a means of providing solutions to identified problems. In view of that, research in agriculture has to do with carrying out systematic and empirical investigations into new methods of farming, production of appropriate chemicals and seed varieties that could boost agricultural production using information resources as necessary ingredients.

II.   Statement of the Problem

Utilization of information resources by the scientists in ARIs in Nigeria has to do with the extent to which information resources in all formats are actually put to use in order to carry out research in various aspects of agricultural development. This is with the view to improve and increase agricultural production to meet the food and industrial needs of Nigeria and organizations respectively. It will also help to minimize and or possibly eliminate importation of such products.

A preliminary investigation by these researchers revealed that the primary objectives for which the ARIs and their libraries were established, have not been adequately met. It seems Nigeria cannot feed its teeming population without resorting to importation. Most farmers were also observed to be still practising traditional methods of farming and using seeds derived from previous harvests.

From these revelations, the question to be asked is what could be responsible for these problems? Could it be that the scientists are not using the information resources provided by their libraries as expected?. The knowledge of the answer to these questions constitutes an information gap. These researchers decided to investigate factors militating against utilization of information resources for research by scientists in ARIs in Nigeria to fill the gap so created.

III.   Objectives of the Study

The general objective of this research is to determine the factors militating against utilization of information resources for research by scientists in agricultural research institutes in Nigeria. The specific objectives of this research include to:

1. Ascertain the extent to which information resources provided by the libraries of ARIs in Nigeria are utilized for research by agricultural scientists.
2. Determine the factors militating against utilization of information resources for research by scientists in ARIs in Nigeria.
3. To determine the factors that could enhance utilization of information resources by scientists in ARIs in Nigeria.

IV.   Research Questions

The following research questions guided the study:

1. To what extent are information resources provided by the libraries of ARIs in Nigeria utilized for research by agricultural scientists?
2. What are the factors militating against the utilization

of information resources for research by scientists in ARIs in Nigeria?

3. What factors could enhance utilization of information resources for research by scientists in ARIs in Nigeria?

V. Review of Related Literature

In summarising utilization of library facilities, Cox and Janti (2012) argue that use is an entity which measures the worth of an item to a library or information system. Use according to the authors is the single criterion which could be used to determine the reason for retaining a document with the collection of a library and use is essential in guiding the collection development efforts of a library. The use of a library can be obtained from the demand of its items. Consequently, if users have no demand for the resources of a library, it means that the library does not have what they want. In this case, it will record low patronage. On the other hand, the library may possess inadequate and outdated resources and still yet, records the patronage of users in Nigeria. This may have accounted for the reason why there is stagnation in the development of the various sectors of the national economy such as agriculture, education and several others. This is because users still depend on obsolete information to carry out their respective functions that are required to move the nation forward.

Despite the above revelations, the utilization of information resources in Nigeria generally and ARIs in particular, are faced with numerous problems. Okanlawon (2010) in the study "Cited agricultural core journals in Ahmadu Bello University Agricultural Library: an appraisal" discovered that libraries all over the world have become handicapped by various limitations including funds, the exponential growth in number of periodicals, subject coverage and high exchange rate especially in developing countries like Nigeria. Similarly, Oji (2010) identified major problems militating against availability of library resources to high inflation rate, inadequate bibliographic tools and poor funding from parent or sponsoring organizations or institutions.

The situations mentioned above makes it extremely difficult for libraries of all types to subscribe to a good number of printed information resources. It also makes acquisition of Information and Communication Technologies (ICT) impossible and cumbersome. Under this circumstance, utilization of information resources in the library would be at their very low ebb. This is because if, as in the case of this study, the agricultural scientists are expected to compete effectively with their counterparts across the world, they must have access to the most current information resources in both print and non-print format.

VI. Research Method

The descriptive survey research method was used for this study. Nworgu (2006) described descriptive survey research method as that which aim at collecting data on, and describing in a systematic manner, the characteristics, features or facts about a given population. All the eighteen ARIs in Nigeria were covered by the study. The population of the study was 1002 agricultural scientists. The sample of the study was 200. This was based on the certified proportionate sampling technique where 20% of the agricultural scientists from each research institute were selected.

The questionnaire and observation were instruments with which required data was gathered. Data collected was organized and analysed according to the research questions. Descriptive statistics with frequencies and percentages was used to analyse research question 1 while real limits of nominal values for example, 0.50-1.49 = Strongly Disagree, 1.50-2.49 = Disagree, 2.50-3.49 = Agree, and 3.50-4.00 = Strongly Agree of the responses were used to analyse the data obtained for research questions 2 and 3.

VII. Presentation of Findings and Discussions

During the research, 200 questionnaires were administered while 179, representing 89.5% were returned and found usable. Table 1 reveals that in rating the extent to which information resources were utilized between average and very high extent, majority of the agricultural scientists, 162 (90.5%), 155 (86.6%), 148 (82.7%), 146 (81.6%), 136 (71.0%), 135 (75.4%) and 129 (72.1%) indicated that internet services/materials/documents, conference proceedings, handbooks, directories, CD-ROM, yearbooks and technical reports were respectively used for their research. On the other hand, majority of the respondents, 179 (95.5%), 165 (92.2%), 164 (91.6%), 161 (89.9%), 158 (88.3%), 155 (86.6%), 148 (82.7%), 141 (78.8%), 134 (74.9%), 117 (65.4%), 94 (52.5%), and 92 (51.4%) rated utilization of encyclopaedias, memos, newspapers, maps, atlases, bulletins and government documents, magazines, dictionaries, stand-alone-computers, theses/dissertations, journals, and textbooks between low and very low extents for their research purposes. On the overall, the results in Table 1 show that majority of the information resources, 13 out of 20 were utilized to a low extent.

Table 2 is a reflection of the extent of agreement or disagreement with factors militating against utilization of information resources for research by scientists in Agricultural Research Institutes in Nigeria. The scientists agreed that lack of enough qualified librarians to provide, process and make available library information resources and services (2.90), infrastructural facilities such as electricity and painting were in short supply and unattractive respectively (2.85), there is inadequate funding of the libraries (2.83), lack of adequate information resources in their areas of research (2.65), lack of adequate modern information technologies to acquire, process and access current information elsewhere nationally and internationally (2.58) and available information resources in their areas of research are mostly outdated (2.54) are major militating factors against utilization of information resources for research. On the other hand, they disagreed that the period of material loan is too short (1.99), the opening hours of the library is not convenient for its effective use by them (1.97) and the number of books loaned out at a time is inadequate for their research purpose (1.95) among others were factors militating against their utilization of information

resources for research. Finally, there is a close range of standard deviation scores indicating close agreement or disagreement in the respondents' opinions.

TABLE I
UTILIZATION OF INFORMATION RESOURCES

S/N	Information Resources	VHE		HE		AVERAGE		LE		VLE		Total	
		F	%	F	%	F	%	F	%	F	%	F	%
1	*Journals*	17	9.5	2.5	14.0	45	25.1	52	29.1	40	22.3	179	100
2	*Textbooks*	10	5.6	15	8.4	60	33.5	55	30.7	39	21.8	179	100
3	*Conference proceedings*	55	30.7	70	39.1	30	16.8	13	7.3	11	6.1	179	100
4	*Technical Reports*	12	6.7	35	19.6	82	45.8	32	17.8	18	10.1	179	100
5	*Theses/Dissertations*	9	5.0	20	11.2	33	18.4	72	40.2	45	25.1	179	100
6	*Stand-alone Computers*	5	2.7	15	8.4	25	14.0	25	47.5	49	27.4	179	100
7	*CD-ROM*	15	8.4	30	16.8	91	50.8	18	10.9	25	14.0	179	100
8	*Internet Services / Materials / Documents*	30	16.8	87	48.6	45	25.9	10	5.6	7	3.9	179	100
9	*Bulletins*	2	1.1	9	5.0	13	7.3	120	67.0	35	19.6	179	100
10	*Magazines*	1	0.6	10	5.6	20	11.2	50	27.9	98	54.7	179	100
11	*Newspapers*	1	0.6	4	2.2	10	5.6	87	48.6	77	43.0	179	100
12	*Maps*	2	1.1	4	2.2	12	6.7	50	27.9	111	62.1	179	100
13	*Govt. Documents*	4	2.2	5	2.7	15	8.4	90	50.4	65	36.3	179	100
14	*Memos*	1	0.6	3	1.7	10	5.6	95	53.0	70	39.1	179	100
15	*Atlases*	3	1.7	6	3.4	12	6.7	60	33.5	98	54.7	179	100
16	*Encyclopaedias*	-	0.0	-	0.0	8	4.5	85	47.5	86	48.0	179	100
17	*Dictionaries*	3	1.7	5	2.7	30	16.8	48	26.9	93	51.9	179	100
18	*Directories*	40	22.3	60	33.5	46	25.7	20	11.2	13	7.3	179	100
19	*Handbooks*	28	15.6	35	19.6	85	47.5	11	6.1	20	11.2	179	100
20	*Yearbooks*	22	12.3	43	24.0	70	39.1	27	15.1	17	9.5	179	100

Key: VHE- Very High Extent, HE- High Extent, LE- Low Extent, VLE- Very Low Extent

TABLE II
MEAN RATING AND STANDARD DEVIATIONS OF RESPONDENTS ON THE FACTORS MILITATING AGAINST UTILIZATION OF INFORMATION RESOURCES FOR RESEARCH BY SCIENTISTS IN AGRICULTURAL RESEARCH INSTITUTES IN NIGERIA

S/N	Problem Statement	X	SD	Decision
1.	*Lack of adequate information resources in my area of research*	2.65	1.05	Agree
2.	*Available information resources in my area of research are mostly outdated*	2.54	.98	Agree
3.	*Available information resources are not relevant to my area of research*	2.11	.96	Disagree
4.	*Lack of enough qualified librarians to provide, process and make available library information resources and services*	2.90	.98	Agree
5.	*Lack of adequate modern information technologies to acquire, process and access current information elsewhere, nationally and internationally*	2.58	1.03	Agree
6.	*It is very difficult to locate information resources from the library*	2.12	.95	Disagree
7.	*The library does not share its information resources with sister research libraries*	2.32	1.10	Disagree
8.	*There are no library and information services such as abstracting, indexing, bibliographies, current awareness and selective dissemination of information services etc to attract one's attention to the library*	2.50	1.08	Agree
9.	*There is no effort made by the library staff to educate the users on the resources and services of the library*	2.57	1.02	Agree
10.	*There is inadequate funding of the library*	2.83	1.02	Agree
11.	*Infrastructural facilities such as electricity and painting are in short supply and unattractive respectively*	2.85	.98	Agree
12.	*The period of material loan is too short*	1.99	1.03	Disagree
13.	*The number of books loaned out at a time are inadequate for my research purpose*	1.95	.91	Disagree
14.	*The opening hour of the library is not convenient for its effective use by me*	1.97	1.03	Disagree

Results from Table 3 indicate that responses from respondents agree with all the items on measures that could be adopted to enhance the utilization of information resources for research by scientists in Agricultural Research Institutes in Nigeria. For example, they strongly agree with the acquisition and use of modern ICT for processing current information nationally and internationally (3.79), improvement on the level of funding (3.77), provision of other sources of power supply (3.77), provision of relevant, current and adequate information resources in their areas of research (3.72), the libraries should facilitate sharing of their resources by participating in a consortium of libraries in the agricultural sector in Nigeria (3.70), and that library staff should be more proactive in the provision of library and information services (3.67). There is also a close range of standard deviation scores which indicate a close agreement in the respondents' opinions.

TABLE III

MEAN RATINGS AND STANDARD DEVIATIONS OF RESPONDENTS ON THE MEASURES THAT COULD BE ADOPTED TO ENHANCE THE UTILIZATION OF INFORMATION RESOURCES FOR RESEARCH BY SCIENTISTS IN AGRICULTURAL RESEARCH INSTITUTES IN NIGERIA (N = 179)

S/N	Statements on Measures that Could be Adopted	X	SD	Decision
1.	*Provide relevant, current and adequate information resources in my area of research*	3.72	.64	Strongly Agree
2.	*Employ qualified librarians to provide library and information services*	3.61	.53	Strongly Agree
3.	*Modern Information and Communication Technologies should be acquired and used to process current information nationally and internationally.*	3.79	.45	Strongly Agree
4.	*The library should facilitate sharing of its resources with sister libraries by participating in a consortium of libraries in Agricultural sector in Nigeria*	3.70	.48	Strongly Agree
5.	*The library should be expanded to accommodate more information resources*	3.35	.68	Agree
6.	*The library should be centrally located for easy access by all researchers*	3.13	.87	Agree
7.	*The period of materials loan should be adequate and convenient to researchers*	3.17	.80	Agree
8.	*The number of materials to be given out on loan to researchers should be adequate*	3.25	.75	Agree
9.	*Opening hours should be more convenient for researchers*	3.34	.76	Agree
10.	*Specific library and information services such as abstracting, indexing, bibliographies, current awareness, and selective dissemination of information should be provided*	3.62	.51	Strongly Agree
11.	*Library staff should be proactive in the provision of library and information services*	3.67	.51	Strongly Agree
12.	*The funding level of libraries should be improved*	3.77	.45	Strongly Agree
13.	*Provision of other sources of power supply*	3.77	.45	Strongly Agree

VIII. Discussions of the Findings

The findings from the analysis of data gathered for the extent of utilization of information resources for research by scientists in Agricultural Research Institutes shows that majority, thirteen (13) out of twenty (20) information resources were lowly or less utilized while only seven (7) were used between average and very high extent. It could however, be argued that the respondents were selective in the use of information resources that were relevant to their needs or areas of specialization except for journals and textbooks. Journals, in particular were supposed to be one of the information resources that should be rated very high by the majority of the scientists because they constitute the most current sources in print format. Even though it could be noticed that the difference in the extent of use and low use of journals and textbooks could be regarded as insignificant, a popular saying is that majority carries the vote. However, a preliminary observation made by these authors showed that most of the textbooks and journals available in these libraries were inadequate and outdated. Ikhizama (2004) corroborated this observation when the author investigated information resources for agricultural development. The author found out that information resources of books and journals were inadequate as 94.7% of the agricultural research libraries relied on donations as method of acquisition of materials. Consequently, little or no effort was made to subscribe to current journals and acquire new textbooks and other relevant information resources. This may have accounted for the low extent of utilization of majority of information resources provided by agricultural libraries. Consequently, the impact of agricultural research on agricultural production in Nigeria is still at its low ebb. Thus, practical farmers, especially those in rural areas, who constitute majority of farmers, depend on traditional methods of farming and local seeds derived from previous harvests. In addition to that, agricultural inputs such as chemicals (herbicides etc) and fertilizers are out of reach to majority of practical farmers both in terms of availability and cost. The resultant effect of this action is continuous low harvest and consequent dependence on importation of majority of agricultural products for food and industry.

The findings from the analysis of data gathered for the factors militating against utilization of information resources shows that lack of adequate information resources in scientists' areas of research and those available information resources for research were mostly outdated were the major factors. Nkiko and Ilo (2006) support this finding when in a study, they found out that users are usually discouraged due to lack of adequate and recent books and journals, non-relevance and conspicuous absence of recommended basic texts. Currency of information resources, in particular, has a great impact on the standard of research output especially in disciplines like agriculture. Sub-standard research may lead to lack of development in agricultural sector and hence poor farming practices and subsequent productions.

Other militating factors in the utilization of information resources by agricultural scientists include non-provision of specific library and information services such as abstracting, indexing, bibliographies etc and lack of effort by the library staff to educate the users on the resources and services of the library. The necessity of providing these services and educating the scientists in every library is that it promotes the utilization of available information resources since the users could be able to determine what is relevant to their research and the need to look for the original document or not. Consequently, the time of the researchers and the librarians is saved. On the other hand, the education of scientists also serves as a morale booster in the identification and effective utilization of the available information resources and services. Thus, specific library and information services and education of

users complement each other to ensure effective utilization of library and information resources.

The major militating factor identified by the research is inadequate funding of the agricultural libraries. In relation to this finding, Aziagba and Umeazor (2008) found out that the principal factor affecting the provision and utilization of information resources is funding and it occupies a pivotal position in the institutions' demand for automation of their libraries. It could further be observed that in most studies by professionals, lack of adequate funding constitute a cog in the wheel of progress for most libraries in Nigeria. Funding of libraries in Nigeria and especially those in Agricultural Research Institutes, could therefore, be regarded as the mother of all problems militating against most library development since it is required at all levels of activity.

The last of the factors identified militating against utilization of information resources for research in Agricultural Research Institutes' Libraries in Nigeria is that infrastructural facilities such as electricity is in short supply. In relation to this finding also, Aziagba and Umeazor (2008) further posited that other problems militating against effective use of ICT include constant power outage. The extent to which power supply in Nigeria is disrupted cannot be over-emphasized. In fact, total reliance on the nation's power supply system, especially for business and effective automated library operations and services means that such business organization and library is not fully committed to achieving the objectives for which it was established.

IX. Conclusion

From the foregoing, it could be realized that there are major factors militating against utilization of information resources for research by scientists in Agricultural Research Institutes in Nigeria. These factors that have been identified, when looked into with a view to eliminating or reducing them to the barest minimum, could be added impetus in realizing the objectives of the agricultural research institutes in the long run. This is because these factors when delimited could take care of the constant changes that occur in agricultural development worldwide. Consequently, the hope of revamping agriculture in Nigeria could be enhanced.

X. Recommendations

Based on the findings of this study, the following recommendations are made:
1. The Federal Government should improve the funding to all Agricultural Research Institutes in Nigeria with a directive that at least twenty percent (20%) of such allocations be spent on agricultural research libraries' development.
2. The Agricultural Research Institutes, through the medium of the librarians should endeavour to acquire relevant, current, and adequate information resources in all formats (print and non-print) for scientists' utilization for effective and sustainable research in agriculture.
3. Additional experienced and qualified professionals

should be employed to provide library and information services. In that regard, specialized information services that are that are based on the profiles of agricultural scientists should be embarked upon to increase their awareness and effective utilization of information resources.
4. A consortium of libraries in the Agricultural Research Institutes should be established to facilitate sharing of information among libraries and scientists.
5. Other sources of power supply should be acquired for all libraries so as to ensure maximum utilization of information resources, especially, the Information and Communication Technologies.

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