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The Role of Libraries in Supporting Agricultural Policy Research - Evidence from Selected University and Research Institute Libraries in Nigeria

Valerie Rhoe, Victor Oboh, and Peter Shelton

IFPRI, Nigeria

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IFPRI-ABUJA
International Food Policy Research Institute
c/o International Center for Soil Fertility and Agriculture
Development
No.6/ Plot 1413 Ogbagi Street
Off Oro-Ago Crescent
Cadastral Zone 11, Garki, Abuja
Nigeria
E-mail: ifpri-nigeria@cgiar.org
www.ifpri.org

IFPRI HEADQUARTERS
International Food Policy Research Institute
2033 K Street NW
Washington, DC 20006-1002 USA
Tel. +1-202-862-5600
Fax +1-202-467-4439
E-mail ifpri@cgiar.org
www.ifpri.org

THE NIGERIA STRATEGY SUPPORT PROGRAM (NSSP)

BACKGROUND PAPERS

ABOUT NSSP

The Nigeria Strategy Support Program (NSSP) of the International Food Policy Research Institute (IFPRI) aims to strengthen evidence-based policymaking in Nigeria in the areas of rural and agricultural development. In collaboration with the Federal Ministry of Agriculture and Water Resources, NSSP supports the implementation of Nigeria's national development plans by strengthening agricultural-sector policies and strategies through:

- Enhanced knowledge, information, data, and tools for the analysis, design, and implementation of pro-poor, gender-sensitive, and environmentally sustainable agricultural and rural development policies and strategies in Nigeria;
- Strengthened capacity for government agencies, research institutions, and other stakeholders to carry out and use applied research that directly informs agricultural and rural policies and strategies; and
- Improved communication linkages and consultations between policymakers, policy analysts, and policy beneficiaries on agricultural and rural development policy issues.

ABOUT THESE BACKGROUND PAPERS

The Nigeria Strategy Support Program (NSSP) Background Papers contain preliminary material and research results from IFPRI and/or its partners in Nigeria. The papers are reviewed by at least one reviewer from within IFPRI network but are not subject to a formal peer review. They are circulated in order to stimulate discussion and critical comment. The opinions are those of the authors and do not necessarily reflect those of their home institutions or supporting organizations.

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Valerie Rhoe, Victor Oboh and Peter Shelton

Department, IFPRI, Nigeria

Introduction

Agriculture is the largest contributor to the economic well-being of most Nigerians. For the agriculture sector to continue to grow, research-based knowledge of the existing agricultural practices, the potential of the sector, the approach for transforming the sector, and the impact of the transformation on the economy, sector, and population is needed. It has also been shown that agriculture R&D could increase agriculture growth and reduce poverty (Fan 2008; Thirtle et al. 2003). Therefore, research-based evidence is important to guide decisions that affect Nigeria's agriculture sector and its people.

The quality and effectiveness of policy-making depend to a large extent on the quality of knowledge on which decisions are based (Hovland, 2003). Policy decisions could be shaped by the political, institutional, and cultural environments in which information and knowledge are produced, disseminated, and exchanged among stakeholders. According to Carden (2004), research findings may not have immediate and direct influence on decisions, but over time, their impact can be seen more clearly. The release of a research report represents an occasion for collective discussion and perhaps reconsideration of the issues raised by the report. Thus, understanding how knowledge and information are produced and disseminated, and how policymakers use it, should be an essential piece of agriculture policy and development strategy.

An effective national agricultural research system (NARS¹) is required for high quality research. The NARS researchers need to have access to recent, high quality literature, methodology, and data; and the capacity to use this information analytically to lay a solid foundation for research applicable to Nigeria's agriculture sector. In addition, other stakeholders in the agriculture industry, such as policymakers, educators, students, development partners, members of the private sector, and extension personnel, need high quality, relevant, and timely agricultural information to make good strategic decisions (Popoola, 2008).

The objective of this paper is to assess the capacity of Nigerian libraries within NARS to support high quality agricultural policy research. Specifically, the study:

1. Assesses the human, material, and electronic resource capacities for supporting agricultural policy research in selected institutions;
2. Examines the experiences and challenges faced by faculty and students when accessing information for research; and
3. Identifies challenges faced by libraries in providing access to information.

This paper first reviews the literature and presents a conceptual framework. It then discusses the research methodology and presents key results. It concludes with recommendations for strengthening libraries in Nigeria to support agriculture policy research.

Literature Review

To provide evidence to support agricultural policymaking, researchers need to be part of an effective research system. Most countries have an established national agriculture research system but the effectiveness of these systems varies. Research has shown that the effectiveness of NARS depends on: the national research policy for the system; a stable institutional structure; diverse, sustainable, and stable funding; autonomy of the system; human capacity to set research priorities and conduct analytical research; and a consistent research staff (Byerlee and Alex 1998; Idachaba 1998). Within this environment, high quality agricultural policy and rural development research in Nigeria requires that faculty, students,

¹ NARS refers to national research institutions and universities

policymakers, and other stakeholders have access to retrospective and current information, methodology, and data (Popoola, 2000). Libraries play a central role in making such information available.

According to Mangstl (2006), “libraries support agricultural research by enhancing access to information through effective management of its resources and provision of a wide range of information services and products to researchers, scientists, and policymakers in the agriculture sector.” Ogunsola (2005) expands this list of regular users of agricultural information service to include: 1) faculty who manage research, teach, and provide technical support for agricultural development programs and projects; 2) students involved in research activities; and 3) other workers in the agricultural sector involved in the preparation, implementation, and evaluation of projects for local, national, and international organizations.

The traditional roles of libraries have been the collection, organization, preservation, and dissemination of intellectual outputs, but the approaches to these traditional roles are evolving to facilitate easier access. With the onset of the digital age, the role of libraries has expanded to be not only a center of collected printed materials, but one that provides access to electronic information; therefore, the need to have expertise in information management is growing (Klugkiss 2001). Many libraries in the developed world are actively keeping pace with the changes within this discipline by providing access to the Internet, digitizing institutional research and library documents, establishing institutional electronic databases, and providing access to other electronic bibliographical databases such as On-line Computer Library Center (OCLC), First Search and Commonwealth Agricultural Bureaux (CAB), and direct and electronic statistical databases such as World Development Indicators, electronic journals, and open-source resources. These libraries are also using communication tools such as blogs and wikis to inform their clients (i.e. students, faculty, researchers, policy advisors) of new resources received and to circulate recent research published within the institution.

However, libraries in developing countries are lagging behind and vary in their ability to provide similar access to knowledge resources, due to poor funding, power supply, Internet access, infrastructure, and human capacity (Ani 2005). Exceptions include South Africa, where libraries are publishing electronically and providing their users access to electronic-based information. In other countries, institutions with full Internet access may only use it for accessing e-mail and simple Internet searches (Chisenga 2000). According to Chisenga (2000), libraries need to be properly funded, equipped, and well-staffed in order for their institution and research to be part of the global information infrastructure.

Developing a relevant, up to date, balanced and usable collection is an important aspect of library services. Academic and research library collections are built to meet the specific research and information needs of the institutions’ academic and research programs (Oseghale, 2008). According to Lumande and Ojedokun (2005), the effectiveness of library collections is measured by the extent to which they facilitate research activities and students’ projects and assignments. Lawrence et al (2001) maintain that for a library to be effective, its collections must match the expressed needs and information expectations of the university community. In Nigeria, the National Universities Commission (NUC) conducts periodic accreditation exercises among faculty and library staff to ensure that libraries are well equipped to meet the demand of users (Chiemekwe et al, 2007). This imposes responsibilities on libraries to ensure that their collections reflect the requirements for accreditation.

Status of Nigeria’s Libraries

Nigeria’s government (federal and state) has been the main financial supporter to university education since the 1950s (Agboola 2000) and continues to be the main donor today. Most federal universities receive funding through the National Universities Commission (NUC),

except for the three Universities of Agriculture, which receive funding through the Federal Ministry of Agriculture and Water Resources. State tertiary facilities are directly supported by state ministries of education and/or the relevant Governors' Office. Funding for Nigerian university libraries is primarily through the recurring expenditures of universities (Agboola 2000). Initially, universities were required to spend five to eight percent of recurring funds on their respective libraries, but there was no enforcement mechanism.

From 1948 to 1979, collections at university libraries grew extensively as the economy was strong and foreign exchange was available. In the late 1990s, these collections held 500,000 and 800,000 volumes (Commonwealth Universities Yearbook 1997). The available information shows that from 1980 to about 2000, the collection rate was minimal, as Nigeria's economy was weak. During the early 1980s, the enactment of a policy that required an import license for books and journals inhibited libraries from importing publications. The situation worsened during the period of the structural adjustment program (SAP) when the local currency was devaluated sharply (Agboola 2000), thereby making it very expensive to import books. A study by Ekpenyong (1993) documented that as a result, the acquisitions of publications by the University of Ibadan's library dropped from 17,000 volumes in 1976/77 to 1,770 volumes in 1989. In 1990, a World Bank supported Federal University Sector Adjustment Credit was provided to support the acquisition of books, journals and equipment, and for the repair of equipment, development of staff capacity, and recruitment of expatriate staff (Tamuno 1998). Only one of the three installments was released before the project was closed. The European Union provided similar support to state-owned universities before it was also aborted (Ifidon 1995). In 1992, a 10 percent Library Development Fund (LDF) was instituted, deducted from the recurring allocations of federal universities and remitted directly to the libraries (Akindojutimi, 2010). When the university accreditation policy was passed, university funding to support collection development became ad hoc, as it was allocated according to expected accreditation visits (Agboola 2000).

Ani (2005) surveyed the librarians of 14 federal universities in Nigeria. Sixty-four percent of those who responded stated that their libraries had the relevant information infrastructures to allow for a virtual library to be set up, and that 86 percent of the libraries provided additional training to its staff to enhance service delivery. An in-depth study at the University of Agriculture - Abeokuta assessed the access and retrieval of electronic information by 789 randomly selected users. The results indicated that undergraduate students relied largely on the automated library catalogue (OPAC) to find literature, while final year undergraduate students, postgraduate students, and academic staff used mostly bibliographic databases tools such as TEEAL and CAB abstracts. Those who used the bibliographic databases reported that they found them easy to use. The reliance of most undergraduate students on the automated library catalogue limits these students to resources that are most likely outdated. Osinulu and Balogun (2003) found that most faculty members patronize commercial cyber cafés for browsing the Internet instead of the library due to unstable power supply and frequent system failures. Other research has shown that the use of the Internet for academic activities has improved the availability of information and data for research (Byork and Turk, 2001).

Some studies on patterns of library use in Nigerian Universities reported low patronage of library facilities due to low levels of awareness, lack of relevant materials, and poor reading environments (Osinulu, 1998, Amkpa, 2000). Similar studies conducted by Oyesiku and Oduwole (2004) revealed that students used the library mostly during examination period and for class assignments. Furthermore, collections were inadequate to meet users' demands.

The Mortenson Center for International Library Programs (2005) assessed four libraries (Bayero University Library, Kano; Ahmadu Bello University Library, Zaria; University of Ibadan Library, Ibadan; and the University of Port Harcourt, Port Harcourt) in Nigeria which

are recipients of the MacArthur Foundation grant. The assessment revealed that the libraries have insufficient funding for collection development, with only a few acquisitions since the mid-1970s. Late budget approvals impede proper planning for purchasing new publications and maintaining journal subscriptions, and acquisition had become more difficult due to federal regulations and policies that prohibit the purchase of materials from other countries. The assessment also indicated that rather than creating a cooperative environment, in which sharing library resources may have been an option, inadequate funding and the shortage of acquisitions actually promoted an environment of competition---at a time when libraries would have greatly benefited from supporting each other. Further, although these libraries provide electronic resources, they are not being used fully due to limited practical and reliable access. To strengthen their ability to provide easy, reliable access to the latest information, the Mortenson Center recommends that the newly established consortium developed under this program could coordinate collection development, communicate library budgetary information on a timely basis, make electronic resources available on a LAN hard drive, provide assistance for digitizing unique collections, setting up library websites, and the adequate training of staff members, and finally, undertake proper infrastructure development.

The literature review and interviews suggest the need for Nigerian libraries to become more virtual, and though studies have found that Nigerian libraries are moving towards this approach, they continue to face challenges. Omoniyi (2006), who assessed five university libraries in Nigeria for their ability to adopt a virtual approach, found that only 29 percent of the libraries' computer systems were networked, and mainly consisted of CD-Rom Search, OPAC, and management routines. He also found that the main deterrents to setting up a virtual library are fluctuating power sources and changes in government policy on capital procurement.

Conceptual Framework

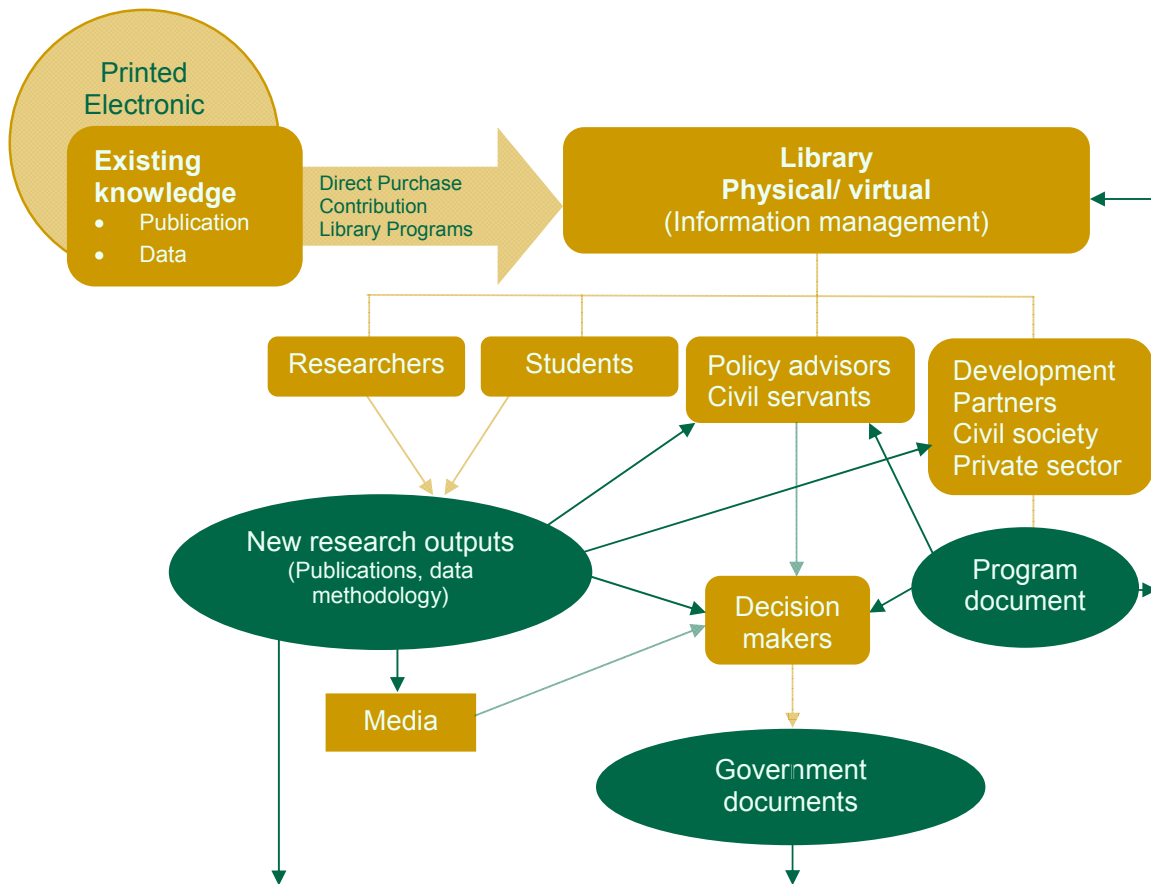
Evidence-based policymaking relies on findings that emerge from research and analysis. The availability of information and data is the foundation for policy advice (Carden 2004), but developing countries lack access to existing knowledge and data fundamental to drawing reliable conclusions from research. Without a strong information management system, policy arguments are less likely to be effective. Therefore, it's important to understand the relationship between knowledge and decisionmaking.

New agriculture research, policy decisions, and program implementation rely on existing knowledge to guide the research topic and process, and provide background information for policy decisions and input into implementing programs. Existing knowledge can be provided orally, dramatically, or in printed form. Although oral and dramatic presentation of knowledge can be passed down through history, its timely availability and access may impede it from being retrieved, and therefore, written knowledge needs to be widely shared and easily accessible. The conceptual framework in Figure 1 illustrates the relationship between existing information and new research, policy design, and program implementation. . This framework includes the sharing of information to inform policy decisionmaking, but does not delve into this complexity.

Written knowledge, either printed or virtual, is often recorded, stored, and managed within physical or virtual libraries that are either publicly available or open to target audiences such as universities. Libraries receive their publications and other information resources through direct purchase, contribution, and/or programs that aim to strengthen libraries. The staff of the library manages these physical and virtual resources so that users of such knowledge (researchers, students, policy advisors, civil servants, development partners, and civil society) can easily identify, retrieve, and access relevant up-to-date documents and data.

Users of libraries encompass a variety of stakeholders, including researchers, policy advisors and civil servants, development partners, members of civil society and the private sector, each with different purposes for using the information provided. Researchers and students rely heavily on existing knowledge during the conceptualization of their research and throughout the research process. During conceptualization, they review formally published and gray literature (i.e. discussion papers, program documents, conference proceedings, technical guides) to identify gaps in existing research that is of interest to them and/or demanded by stakeholders. This review of literature also provides information on whether or not the research topic has been studied before and in which locations, the data and methodology used to conduct the analysis, the results of relevant research, and possibly issues faced in doing the research, all of which helps guide future research. This review also helps researchers conceptualize issues and select methodology based on the type of questions to be answered and the constraints the researcher may face in conducting the research. Libraries are often the first place researchers visit—physically or virtually-- to gather printed or electronic literature and to learn what data already exist; therefore, it is key that libraries have quality publications and information management systems that allow researchers to conduct the literature review efficiently and effectively.

Figure 1: Conceptual Framework Linking Existing Knowledge to Policy Research



From the literature review, researchers will implement their research using secondary data or by collecting primary data, conduct the analysis, summarize the results and implications, and publish this knowledge formally or as gray literature. To support the research process, these new publications are then fed back into the library system for others to use. These

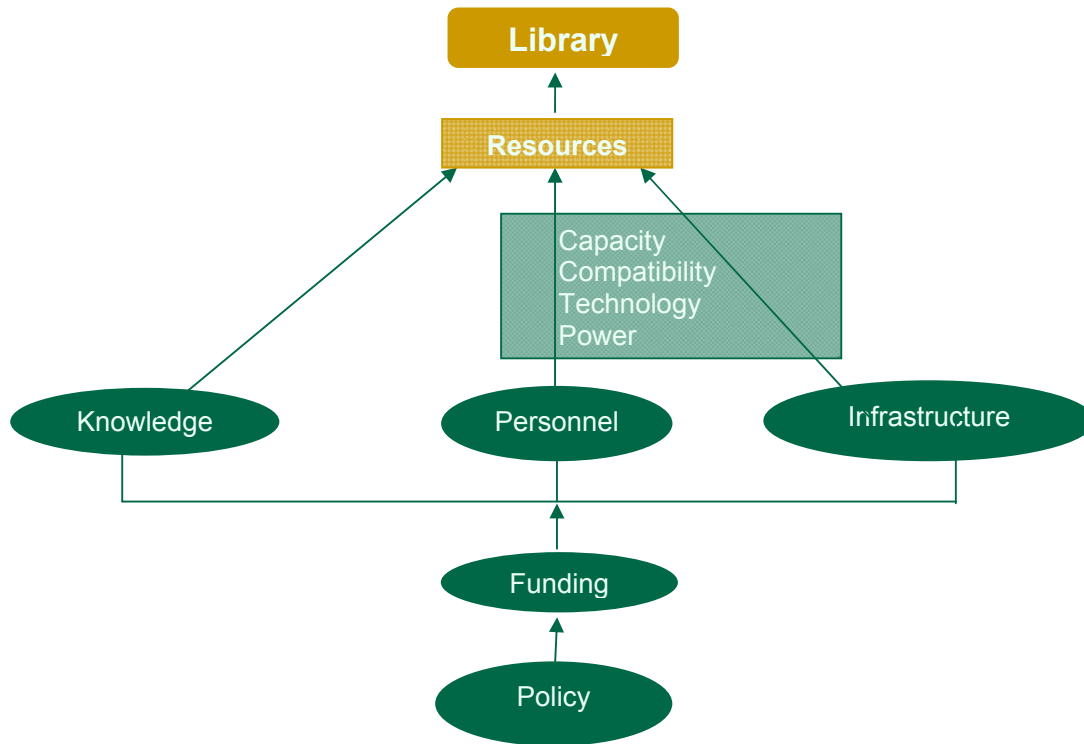
new research results can also be delivered to policy advisors, civil servants, development partners, members of civil society, the private sector, and the media, as well as other researchers for use in their research, policy decisions, advocacy, and program implementation. But access to this new research is not sustainable unless it is fed back into library information management systems.

When policy advisors or civil servants are requested to gather information for a policy or program decision, they should be able to easily identify the most recent research within the country as well as regional and international knowledge on the relevant issues by accessing either a virtual or physical library. A written or oral synthesis of this information is shared with decisionmakers along with expert opinions based on the local context. This link between policy advisors and civil servants with government decisionmakers is only one approach in which information and advice is given for the guidance of final policy decisions. The intricacies in which policy decisions are made are not explored in this framework, but have been discussed in Aberman et al, 2009. Based on decisions by policymakers, government documents are prepared containing policies, strategies, and program information for public consumption. These documents should thus be fed back into a library/ information management system to allow the public access and to ensure their availability for future use. Researchers can identify topics of important interest to the government from these documents while development partners and individuals from the private sector are kept informed of the government's way forward.

Development partners, as well as members of civil society and the private sector also rely on existing knowledge to support the design and implementation of their activities, business, and advocacy. Often these stakeholders produce documents highlighting the lessons learned or impacts of their activities. To continue to support the knowledge base, information generated by these stakeholders should also be fed back into the library system, which can become the knowledge base for policy research.

However, in order to support the process in Figure 1, libraries need to have sufficient capacity and resources to function properly. The level and type of resources depends on the operational approach of the library (traditional, virtual, or a combination of the two), but all of the approaches depend on knowledge (books, journals, data), personnel, and infrastructure. The level of utilization by personnel and provided by the infrastructure depends on the type of technology available, compatibility of the technology across the library, the source and level of power to operate the technology, and the capacity of the librarian staff to use the technology. The availability of these resources depends on the level of funding, which is directed by government policy (Figure 2).

Figure 2: Support to library functions



Methodology

Data Collection

In order to meet the objectives of this study -- to (1) assess the human, material, and electronic resource capacities for supporting agricultural policy research in selected institutions, (2) examine the experiences and challenges faced by faculty and students when accessing information for research, and (3) and identify challenges faced by libraries in providing access to information -- we gathered data through focus group discussions (FGD) with library staff, faculty members, and postgraduate students at six libraries in five federal universities and one research institute. These included the University of Ibadan (UI); Obafemi Awolowo University (OAU), Ile Ife; University of Agriculture, Abeokuta (UNAAB); and the Nigerian Institute for Social and Economic Research (NISER), Ibadan, in Southwestern Nigeria; and Ahmadu Bello University (ABU), Zaria and the University of Agriculture, Makurdi (UAM), in North-West and North-Central Nigeria, respectively.

FGD is a “non-directive” approach that permits interaction between the moderator and participants and among participants. This approach allows researchers to gather richer and more in-depth information. We conducted two rounds of focus group discussions in late 2008 for this study. The first round included library management staff, and the second round included faculty and postgraduate students from the department of agricultural economics and department of extension and rural development. The distribution of participants in the FGDs is shown in Table 1.

Table 1: Distribution of focus-group participants according to institutions

Focus Group	Number of participants					
	UI	OAU	UNAAB	NISER	UAM	ABU
Library Staff	11	7	6	2	10	10
Faculty and Graduate Students	35	21	34			

Source: Author's calculations

For the FGDs with library staff, we prepared a short list of questions concerning available library resources, access to the resources, storage of publications, communication procedures, Internet and communication technologies (ICT), staff strength, and challenges facing the library (Appendix 1). We held one FGD in each institution, lasting between 45 and 90 minutes. The number of participants ranged between 2 and 11. We also toured each library to gather information on equipment and literature.

The FGDs with faculty and students involved a short-list of directive questions that covered areas like accessibility to library resources, perceptions of satisfaction with library services, working relationships with library staff, and challenges faced in accessing library resources. The discussions lasted between 60 and 120 minutes and participants numbered between 21 and 34.

Results

Libraries' Capacities for Supporting Agricultural Policy Research

We considered the capacity of libraries to support policy research through three perspectives: human resources, material resources, and electronic resources.

Human Resources. Table 2 shows a shortage of trained librarians, representing only about 19 percent of the library staff. The remaining staff (81 percent) consisted of administrative and other support staff. About 58 percent of the staff members were male and the remaining 42 percent were female (Table 3). Many of the institution staff mentioned a shortage of trained librarians which has hindered the establishment of some faculty and center libraries. It was clear from the discussions that four of the institutions lacked qualified personnel for managing the operations and maintenance of the library's Internet connection and maintenance. A detailed analysis of the job descriptions and educational background of library staff and needs of the libraries could provide useful insight into their staffing needs..

Table 2: Population of library staff in sampled institutions by cadre

Category of staff	Number of staff per institution					
	UI	OAU	UNAAB	NISER	UAM	ABU
Trained Librarians	28	19	12	6	11	49
Admin. & other support staff	103	136	28	3	60	190
Total	131	155	40	9	71	230

Source: Authors' calculations

Table 3: Population of library staff in sampled institutions by gender

Category of staff	Number of staff per institution					
	UI	OAU	UNAAB	NISER	UAM	ABU
Male	82	70	19	4	42	155
Female	49	85	21	5	29	84

Source: Authors' calculations

Material Resources. All libraries had hard copies of both local and international journals, but recent versions of the journals were not available within the library. For instance, at one university the most recent journal had been published in the late 1990s. None of the

libraries except one carried subscriptions for electronic journals. The librarians acknowledged that their inability to meet the journal needs of their faculty members and students was primarily due to underfunding. Subject areas relevant to agriculture that were identified as needing more publications included agricultural systems, agricultural policy analysis, tropical agriculture, and physical sciences. Currently, several programs and projects are providing assistance to libraries in developing countries with the procurement of journals for free or low cost. All of the libraries in this study have access to AGORA and TEEAL. Four institutions also use EBSCOhost, HINARI, INASP, OARE and JSTOR. Two institutions recently received journal donations supported by the Carnegie Foundation for the Advancement of Teaching and the John D. & Catherine T. MacArthur Foundation

Users of libraries typically have access to hard copies of data but not electronic copies of the raw data, such as data sets from the National Living Standard Survey and the Core Welfare Indicators Questionnaire.

A tour of the libraries showed that there were generally few copies of gray literature. Most of the gray literature in stock was donated by the Food and Agriculture Organization (FAO), the International Institute for Tropical Agriculture (IITA), the World Bank, and the Central Bank of Nigeria (CBN). Publications from ministries, departments, and agencies (MDAs) of government were very few as a result of bureaucratic and financial difficulties in obtaining them.

The intellectual output of institutions' research and teaching staff was minimal in their libraries. Hard copies of institution-sponsored research reports are often deposited in libraries due to institutional policy, but staff members are not obligated to submit external publications. Hard copies of postgraduate theses were available and three libraries were at various stages of digitizing them.

All libraries surveyed offer open access to staff and students of the respective institution. All other users are required to apply or show letters of introduction from their institutions or organizations. However, the hours of operations are somewhat restrictive, as some libraries are only open from 8AM-1PM on Saturday, 3-8 PM on Sunday, and 8AM-9PM during the school week. All the libraries conduct entry-checks for users, which is intended to ensure security within and around the library environment, as theft and mutilation of books are recurrent. To register a request for library resources, library staff must manually enter each publication.

Four libraries provided both card catalogs and searchable electronic databases while the others used only the card catalog system. All the participants acknowledged the advantage of the electronic database over the card catalog but rarely use it due to unreliable power supply and frequent computer failures. The quality of Internet service and the number of computers varied across the seven libraries as some receive special grants. In most libraries that do provide access to the Internet, the majority of the computers did not have virus protection.

There was a general consensus in all focus group discussions that the inter-library loan system was not effective. Participants identified lack of cooperation from partner institutions, high cost of postage, long geographical distance between institutions, and lack of Internet connectivity as contributing to the failure of the system.

Access to Research Information by Faculty Members and Students

The researchers and students who participated in our focus group discussions came from University of Ibadan, University of Agriculture Abeokuta, and Obafemi Awolowo University. The participants stated that they access literature from the Internet and through research

experts. Most faculty members agreed that their patronage of the library is low, while students use the library frequently, but primarily for reading during examination periods. The lack of current and up-to-date books and journals, poor infrastructure (especially electricity), and a perceived unfriendly staff attitude limited the patronage to the library.

Participants from the University of Ibadan also stated that they visit other libraries located in the Ibadan metropolis such as NISER, the International Institute for Tropical Agriculture (IITA), the Institute for Agricultural Research and Training (IAR&T), the National Institute for Horticultural Crops (NIHORT), and the Cocoa Research Institute of Nigeria (CRIN). Among the available information portals TEEAL was considered to be the most widely accessible by faculty and students. Only a few of the group participants accessed AGORA, while none used HINARI, INASP, OARE, JSTOR or EBSCO host. Deeper discussion suggested that insufficient knowledge of available resources as well as how to use them, could be primary factors. Participants also complained of poor access to the Internet due to limited number of computer stations and unreliable power supply.

There was a general consensus among faculty and student participants that the quality of services provided by library staff was poor. In their opinion, most library staff displayed unfriendly attitudes, often leaving users to search for materials on their own.

Students also stated that they consulted with experts (lecturers and researchers) within and beyond their institutions for research assistance. Interaction and information sharing among faculty members, however, was reportedly low.

Challenges Facing Nigerian Libraries

Participants identified the major challenges facing the libraries as insufficient funding, unreliable power supply, and low bandwidth. Other challenges included the lack of skilled staff and inadequate computer stations. Discussions on funding suggested that although the NUC has a directive to allocate 10% of university's annual budget for library development, this allocation is often not released.

According to on-site observations and interviews, all the libraries have backup power-generating plants. However, one of the institutions reported having no access to the Internet for the past three months due to the absence of the public power supply and a faulty backup generator. The situation forced faculty members and students to patronize commercial cyber cafés with charges ranging between N150 and N200 per hour.

Low bandwidth was widely mentioned as a critical problem in all the libraries. In four institutions, the information and communications technology (ICT) centers control the allocation of bandwidth across the entire university, resulting in insufficient bandwidth. Furthermore, a rise in the number of Internet users due to elevated student enrollment has increased bandwidth demand, resulting in slower access.

All the libraries emphasized the inadequacy of trained personnel to handle ICT. In addition, the number of functional computer stations and accessories available were low compared to user demand. In four of the institutions, it was reported that Internet users queue for extended periods of time during examination periods. In addition, photocopiers, printers, and scanners were in short supply.

Implications

There is a growing trend among university libraries in developing countries to become virtual libraries. This study highlights the challenges and capacity needs of Nigerian research-based libraries in supporting agricultural policy research. For these libraries to properly support agricultural policy research in Nigeria they will need to tap into the

information resources available around the world, and to transition to become a more virtual library. To support this transition, these libraries need to develop appropriate infrastructure and strengthen their staff capacity, consortium-building efforts, and communications.

Infrastructure: Major impediments to Nigeria's university library system are inadequate power and Internet bandwidth. Without adequate, reliable electricity, supporting a virtual library will be challenging and costly, but with power, the costs are minimal compared to the benefits. In addition, better allocation of dedicated bandwidth will allow faculty and students to search and download on-line literature and data within a reasonable time. Therefore, necessary infrastructure for providing electricity and Internet service is required, along with a sufficient number of computers with appropriate software, such as virus protection.

Capacity: It is evident that the existing library capacity is unable to fully support the needs of faculty and students in the production of high-quality policy research. The staffing needs for supporting library users may not be met by the current staffing pattern; therefore, an assessment of existing library staffing needs is important to determine a more efficient coordination of sparse resources. The assessment should consider the current and future needs of the library, including the type of skills required, as the library becomes digital. Secondly, as technology evolves, staff members need training on how to use new technologies so they are able to adequately support researchers and students.

Consortiums: Inadequate physical and electronic publication collection is a common challenge faced by all seven libraries. Efforts to strengthen the few existing library consortiums or to develop a new consortium that support agriculture research are needed to reduce cost of subscribing to journals and electronic databases, share knowledge and experiences in transitioning to a virtual system, and encourage an inter-library loan system. The consortium could work together to investigate other programs that provide support to developing country programs. The library could also encourage faculty to donate copies of their publications by providing incentives, such as a display of recent faculty publications, announcements in the library communications, and make such publications available to the inter-library loan system. The theses of graduate students could be electronically submitted to each university library and uploaded to MALICO, a database of theses produced in African universities.

Communication: The communication gap between library staff and faculty/students results in library sources being underutilized. Libraries need to develop and run regular information campaigns, and provide regular training to students and faculty members on how to use the resources available, especially new digital tools and databases. Announcements about resources, training, and other pertinent information could be directly conveyed to students and faculty using existing free web-based software programs like wikis and blogs or posters within the departments. The consortium could reduce labor costs by working together to prepare short technical guides on using library resources.

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Appendix 1: Questionnaire

Nigeria Agriculture Library Assessment Focus Group Discussions with Librarians and Library Staff

Date:

Institution:

Interviewer(s):

Interviewee(s):

1. Available Resources within the Library
 - a. What journals do staff and students have access? Hard or electronic copy
 - b. What journals have your faculty and students requested that you don't have access to?
 - c. What types of data do staff and students have access?
 - d. Do staff and students have access to gray literature?
 - e. Is the library used to house the intellectual outputs of staff? Is there a mechanism to have published articles included in the Nigeria National Library
2. Uses and type of your collection
 - a. Is your library an open or closed collection
 - b. Who has access? staff ,outsiders?
 - c. What is the typical procedure in filling a request (integrated system?)
 - d. If a publication is not available, how does the library get access to it?
 - i. Are publications exchanged through an inter-library loan process? If so, what are the challenges and constraints? What works well? What institutions do you share publications?
 - ii. What is the timeframe in filling a request?
3. Does the library use any of the following support programs (See next page)?
4. Storage of publications
 - a. What format are the publications available?
 - i. Hardcopy:
 - ii. Electronic
 1. CD-ROM
 2. On Computer
 3. Other
 - b. Do you have space to contain publications from your organization?
 - c. What is the procedure for getting publication from your researchers?
 - d. Are PhD Theses stored at the library?
 - e. Do you have space to contain publications from your organization?
 - f. How do you get access to these publications?
5. Communication
 - a. How are new publications announced to the staff and student body?
 - b. Are library resources available in an electronic searchable database or card catalogue?
 - c. Are the library, publication department, researchers and webmaster linked?
 - d. What does the library use to convey information about available resources to those within the university?

- e. How are internal messages conveyed
 - i. Visits to the library
 - ii. e-mail
 - iii. Other
- 6. Internet Connectivity/ Computers
 - a. Is the library connected to the Internet?
 - b. If your answer is yes who has access to this computers:
 - i. library staff
 - ii. organization staff
 - iii. Faculty
 - iii. Students
 - iv. Outsiders
 - v. Others
 - c. How many computers does the library have?
 - i. How many of these computers are working?
 - ii. How many are connected to the Internet?
 - iii. How many have CD-ROMS?
 - iv. Do you have virus protection?
 - d. What is the bandwidth?
 - i. Available:
 - ii. Required:
 - e. Does your university collaborate with the AVU Bandwidth buying Consortium?
 - f. Does your library belong to any Library consortium for purchase and access of publications? If yes please mention them
- 7. Staffing
 - a. Number of staff members?
 - b. What are the positions? And roles? (request job descriptions)
 - c. What are their qualifications?
 - d. Gender of staff
- 8. What other challenges does the library encounter?
- 9. What are the future plans of the library?

Existing Programs that Support Libraries

- Library in your Letterbox:
- MALICO
- UbuntuNet Alliance
- National Virtual Library of Nigeria
- CD3WD
- Questia
- Wiki Textbooks
- Online Access to Research in the Environment, (OARE)
- Books for Africa Helps Africa Fight 'Book Famine'*
- African Journals OnLine (AJOL)
- Agricultural Libraries Network (AGLINET)
- Access to Global Online Research in Agriculture (AGORA)
- Bioline International.
- Budapest Open Access Initiative - Grants for Open Access Journals
- Information for Development Program (CABI-IFD)
- Digital Library of the Commons (DLC)
- Directory of Open Access Journal
- Electronic Information for Libraries (eIFL.net)
- eJournals Delivery Service (eJDS)
- Encyclopedia of Life Support Systems (EOLSS)
- Food Security and Food Policy Information Portal for Africa
- Global Development Network (GDN) The Global Development Network (
- Health Internetwork Access to Research Initiative (HINARI)
- HighWire Press
- International Network for the Availability of Scientific Publications(INASP)/Programme for the Enhancement of Research Information (PERI)
- JSTOR
- TEEAL - The Essential Electronic Agricultural Library
- Union catalog of serials in International Agricultural Research Centers (IARCs)
- Google Scholar