



A
PROFILE of
Research LIBRARIES
in Sub-Saharan AFRICA
Acquisitions, Outreach, and Infrastructure

PROFILER

Lisbeth A. Levey
Director, Project for African
Research Libraries

With the compliments of the
AAAS Sub-Saharan Africa Program



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Sub-Saharan Africa Program
American Association for the Advancement of Science
1333 H Street, NW
Washington, DC 20005, USA

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Acquisitions, Outreach and Infrastructure

Introduction

Access to current literature is essential to research and teaching. For that reason, in 1987 the American Association for the Advancement of Science (AAAS) launched an initiative to provide free subscriptions to journals in the sciences and humanities to sub-Saharan African libraries sorely in need of them. Since then AAAS has been collaborating with African libraries, not only to meet the immediate information needs of scientists and scholars, but also to improve the capacity of libraries to serve their constituency. AAAS-sponsored activities have included workshops, seminars, and reports, such as this profile.¹

This is one of a series of studies. The first, conducted in 1990, examined computer and CD-ROM capability in sub-Saharan African research libraries. Some 150 libraries receiving journals through AAAS received questionnaires, requesting detailed information on hardware and software, funding, maintenance and training, user access, interlibrary cooperation, and the documentation of indigenous research. More than half the libraries contacted, including those located in almost every major university library in sub-Saharan Africa, responded. A report was issued in 1991, which is available free of charge from AAAS. In 1992 AAAS began a follow-on analysis of information management issues in the African libraries profiled in this report. The objective was to examine and assess the extent to which these libraries are able to cope with declining (and sometimes erratic) levels of funding.

The Survey

Thirty-one libraries (mainly university libraries) have been included in the study, which focused on funding the library's serials collection, budgets and planning, reader services and utilization of the library, and equipment (particularly CD-ROM). The libraries selected to be surveyed reflect a representative mix: large and small, general and specialized, relatively well-off and those lacking in resources. Most are anglophone, three are francophone, and one is lusophone. Almost all are institutions with which AAAS has cooperated closely in a variety of ways.²

In order to ensure the relevance of the survey to conditions in sub-Saharan Africa, AAAS asked several African librarians and information specialists to review a draft questionnaire. This

¹See Appendix One for a description of the AAAS Sub-Saharan Africa Program.

²A list of the names and addresses of the libraries responding to the questionnaire will be found in Appendix Two.

Who Responded?

31 libraries in 13 countries:

| | | |
|-----------------|---------------------|-----------------|
| <i>Cameroon</i> | <i>Mozambique</i> | <i>Uganda</i> |
| <i>Ethiopia</i> | <i>Nigeria</i> | <i>Zambia</i> |
| <i>Ghana</i> | <i>Senegal</i> | <i>Zimbabwe</i> |
| <i>Kenya</i> | <i>Sierra Leone</i> | |
| <i>Malawi</i> | <i>Tanzania</i> | |

Types of Institutions

| | |
|----|---------------------|
| 27 | Universities |
| 5 | Research institutes |

Types of Libraries

| | |
|----|-------------|
| 17 | General |
| 8 | Medical |
| 5 | Agriculture |
| 1 | Mathematics |

resulted in the survey document becoming longer rather than shorter, as librarians added questions of special interest to them. The final questionnaire (see Appendix Three) was mailed to 34 libraries in July 1992; 30 libraries responded, many with detailed comments.³ One librarian wrote: "I have pleasure in returning the survey...and it is not a fast one to complete. However, the resulting information is interesting--I had never calculated our budget proportionally according to salaries, books, etc. before! We look forward to receiving the compiled results of the survey." This report is based on returned questionnaires, correspondence, and staff visits to Africa.

Funding the Serials Collection

Internal Funding

Of the 31 libraries included in this study, eight libraries do not subscribe to any foreign serials at all with their own funds, although, for the most part, these libraries were able to support subscriptions to some journals until the early to mid-eighties. Addis Ababa University, for example, maintained a respectable journals collection until about 1988, in spite of civil war and other dislocations. Beginning in 1989, however, the university library ceased to receive any foreign currency allocation at all, which resulted in the cancellation of its subscriptions to some 1,200 journal titles. At present, with funding from the Swedish Agency for Research Cooperation with Developing Countries (SAREC), the university is able to subscribe to 126 serials. The library receives an additional 300 titles free of charge--170 through AAAS and 130 through exchanges.

The University of Yaoundé Medical Library is in much the same predicament, for it has been unable to maintain even its extremely small core collection for the past two years. In the 1991-92 academic year, the library cancelled 80 subscriptions outright, keeping a total of 27 titles, but lack of funding made it impossible to pay for these 27 subscriptions. A number of French

³The University of Nairobi sent a paper in lieu of a completed questionnaire. "Special Problems of Libraries in Higher Education" was presented by Mary Kimani, Librarian of the University of Nairobi, at a Conference for African Ministers of Education on Textbook and Library Development in Africa in Manchester in October 1991.

agencies of cooperation, primarily AUPELF (Association des Universités Partiellement ou Entièrement de Langue Française), have filled the gap by donating almost 200 journals to the library.

Far worse off than either Addis Ababa or Yaoundé is the University of Nigeria Library, which lacks both an acquisitions budget and donor assistance. The last year during which the university had enough foreign currency to subscribe to journals was 1987--824 titles in all. Today, virtually the only journals reaching the university are through the AAAS program (about 80 journal titles). The librarian commented: "This programme has given our library a facelift. The current titles from AAAS have brought our patrons, who hitherto had been on the run, back to the library once more."

Those libraries with some internal funding to subscribe to journals run the gamut in terms of their buying power. They subscribe to as few as four journals or as many as 1,500. About half of them currently subscribe to under 100 journals with their own funds. In Ghana, for example, library funds permit subscriptions to fewer than 50 journals at any of the three universities.

| Journal Subscriptions Internal Funding | |
|---|---------------------|
| no subscriptions | 8 libraries |
| 1-50 subscriptions | 7 libraries |
| 51-100 subscriptions | 4 libraries |
| 100-200 subscriptions | 5 libraries |
| 200-300 subscriptions | 4 libraries |
| 500+ subscriptions | 3 libraries |
| Total | <u>31 libraries</u> |

The situation of the University of Ibadan Library is perhaps typical of many sub-Saharan African research libraries. In a paper presented at a meeting convened at AAAS in May 1992, O.G. Tamuno, Librarian of the University of Ibadan, described the problems she and her staff have encountered as they struggle to maintain the library's serials collection in light of declining funding patterns: During its peak period, the university subscribed to over 6,000 serials. Budget cutbacks forced the library to

"prune" its subscription list to 1,350 titles considered essential to the university. Then, because "the library was not in a position to pay for these core journals, a sliding scale of three subscription levels was worked out. The size of [the library's] annual budget allocation determines which level of subscription to apply." Today the University of Ibadan is subscribing "to less than 10 percent of its pre-1983 intake." In commenting on the value of the AAAS journals program, Mrs. Tamuno wrote, "In many disciplines, the AAAS journals are the only titles serving the information needs of the community."⁴

Only three libraries reported that the number of subscriptions has increased significantly over

⁴"Strategic Planning for Continued Growth of the University of Ibadan Library System," O.G. Tamuno, May 1992.

previous years: the University of Nairobi Medical Library (151 titles as opposed to 18 titles last year), the National Mathematical Centre of Nigeria (176 titles), and Abubakar Tafawa Balewa University (ABTU), also in Nigeria. Although from July 1991-August 1992 the ABTU library only subscribed to 80 journals, it is now able to subscribe to 200 journals, almost all paid for through the library budget. The library clearly receives considerable support from the university administration, which funds 100 percent of the library's annual budget request, about 8 percent of the university's recurrent budget. This is in sharp contrast to a study completed by the Association of African Universities (AAU) in 1991, which noted that "the allocation to libraries shows that in most cases less than 5 percent is allocated each year and in some cases as low as 0.6 percent..."⁵

Only five of the libraries currently subscribing to journals do so exclusively with internal funding: the Institute for Agricultural Research in Ethiopia, Makerere University in Uganda, the National Mathematical Centre in Nigeria, Cheikh Anta Diop University in Senegal, and the University of Nairobi Medical Library. In the case of Makerere University, the library received financial support over a six-year period, first from the Overseas Development Agency and then from the European Community, which permitted the university to subscribe to over 700 serials. These grants expired in 1991; the library is now subscribing to 200 titles with its own funding.

University of Zimbabwe Library Journal Subscriptions

1,578 paid for through the library's budget
250 paid for through donor agency grants
130 donated by AAAS (valued at about \$20,000 by the university)
741 through exchanges

- Internal funding for journal subscriptions remains constant.
- Four-year grant from SAREC in the amount of SEK 600,000 covering all disciplines.
- Four-year grant from the Ford Foundation in the amount of \$100,000 earmarked for journals in law, education, social sciences, medicine, and agriculture.

The University of Zimbabwe has the best endowed library by far of any in the survey. Although the library receives donor assistance, most journal subscriptions are paid for with university funds. This is because the deans of relevant faculties decided early on to put the library's needs

⁵*Study on Cost Effectiveness and Efficiency in African Universities*, Association of African Universities, Accra, Ghana, 1991, page 36.

first (particularly journal subscriptions) in allocating the university's foreign currency allowance, even when this meant that essential scientific equipment could not be purchased.

But even the University of Zimbabwe library has encountered funding cutbacks in the past few years, which will affect its ability to subscribe to journals. In 1989, for example, the library received almost 65 percent of its foreign currency request, but the amount had dropped to less than forty percent in 1991.

Local Currency Payments

In some countries, libraries have access to local currency, but shortage of foreign currency makes it impossible to subscribe to most foreign journals. The British Council, the World Health Organization (WHO), and UNESCO all have programs to utilize local currency payments for equipment, books, journal subscriptions, and other educational purchases, but only in countries that have agreed to this arrangement.

In the case of the WHO "Revolving Fund," all arrangements are handled through WHO/Brazzaville, which routes purchase orders to Geneva, after which the medical library is billed for its journal subscriptions in local currency. WHO headquarters then purchases the requested subscriptions, but only after it has been notified of payment of funds. The whole process takes about six months. Of the eight medical libraries included in this study, the University of Ghana is the only one to buy journals through the Revolving Fund. For the past three years, the medical school library has applied for and obtained about \$18,000 per annum through the Fund. The Revolving Fund is not accepted in Zimbabwe; the remaining medical libraries surveyed did not indicate why they do not use it.

UNESCO coupons, in denominations of \$1 to \$1,000, are purchased from UNESCO national commission offices. They are then redeemed as if they were hard currency. UNESCO charges the supplier (in this case the publisher) a handling charge of 5 percent for amounts up to \$100, 4 percent for amounts up to \$1,000, and 3 percent for amounts over \$1,000.

More than half the libraries surveyed have used UNESCO coupons to purchase books, journals, and, in the case of Makerere University, a microcomputer (about \$15,000 worth of coupons). To mention a few additional cases:

- In 1982/83 and again in 1985/86 Eduardo Mondlane University in Mozambique bought \$100,000 worth of UNESCO coupons. In 1991 the university purchased coupons valuing \$18,000.
- In Tanzania, the Muhimbili University College of Health Sciences, Sokoine University of Agriculture, and the University of Dar es Salaam have each purchased UNESCO coupons in varying amounts--in the case of Muhimbili about \$10,000 over two years, Sokoine \$49,000 from 1988 to 1992, and Dar es Salaam \$75,000 (period unknown).
- At Abubakar Tafawa Balewa University the library has been using UNESCO coupons

since 1982, when it purchased about \$69,000 worth of coupons. Since then the library "has purchased millions of *naira* worth of coupons," which are used to acquire serials, monographs, and, once, catalogue cards, when the university was in short supply and there were none to be found in Nigeria.

Although the UNESCO coupon scheme is simpler in concept than the Revolving Fund, it too is fraught with difficulties. Several librarians wrote that some publishers or subscription services will not accept coupons; others complained about difficulties with their national commissions that make purchase of sufficient coupons impossible.

Donor Support

| Journal Subscriptions Donor Support | |
|--|---------------------|
| no donor support | 9 libraries |
| 1-100 subscriptions | 9 libraries |
| 101-300 subscriptions | 8 libraries |
| 300-400 subscriptions | 3 libraries |
| above 400 subscriptions | 1 library |
| Total | 30 libraries |

Donor support can account for as much as 100 percent of a library's serials acquisitions, as is the case at Addis Ababa University and four other institutions. In an additional five instances, libraries depend on donors for more than 80 percent of their journals budget.

In the area of library support, SAREC is possibly the most significant donor agency in Eastern and Southern Africa. It is supporting library

services in six of the libraries surveyed: Addis Ababa University, Eduardo Mondlane University, Muhimbili University College of Health, Sokoine University, University of Dar es Salaam, and the University of Zimbabwe.⁶ Wherever feasible, SAREC requires that libraries receiving financial assistance must at some point underwrite a share of the costs. Thus, the University of Dar es Salaam, which receives 227 journals as a result of SAREC funding, also subscribes to 387 journals, paid for by the library's own budget.

Other external agencies mentioned in questionnaire responses include the World Bank (Kenya, Ghana, and Nigeria); WHO; the Ford Foundation; ODA; the German Society for Technical Cooperation (GTZ); and the French agencies of cooperation already cited on page 2. Locally, the medical libraries of the University of Ghana and the University of Ibadan have each harnessed the energies of alumni associations. In the case of Ghana, medical school alumni have donated enough money to pay for 17 journal subscriptions, a little more than 10 percent of the total number of serials the library receives. Although the numbers involved are not high, this initiative represents a serious attempt to innovate in light of financial adversity. The University of Ibadan Medical Library also benefits from an endowment established by the teaching hospital.

⁶SAREC also funds journal subscriptions for the Ethiopian Science and Technology Commission, Alemaya University of Agriculture, and Asmara University.

In the first quarter of 1993, the library received 50,000 *naira* (about \$2,700) from this source, which can be used for journal subscriptions.

World Bank assistance to Ghana's three universities is absolutely crucial to the wellbeing of these libraries. Ninety-three percent of the funding for the University of Cape Coast serials collection comes from the World Bank; the situation at the University of Science and Technology and the University of Ghana Balme Library is virtually identical. This same set of circumstances will almost certainly be true in Nigeria, once the Bank's loan to the federal university system takes effect.

However, although World Bank support is instrumental in shoring up access to journal literature in Ghana and, soon, Nigeria, this assistance is not without its pitfalls. In the case of Ghana, there is an annual tender to select the agency to be responsible for handling subscriptions. The process takes so long that subscriptions frequently lapse before a decision is made, which makes it very difficult for libraries to maintain complete collections. One librarian commented that subscribing to journals is not the same as buying a sack of rice, but that the Bank does not take these differences into consideration. In Nigeria funding is beginning later than the Nigerian government anticipated. In 1990 the National Universities Commission (NUC) instructed federal university libraries not to pay for journal subscriptions because these would be covered under the terms of the World Bank Loan. This left some libraries scrambling to cover subscription costs when it became clear that the loan was not immediately forthcoming.

The Total Picture

| Total Number of Journals Received | |
|--|--------------------|
| under 100 subscriptions | 6 libraries |
| 100-200 subscriptions | 5 libraries |
| 201-300 subscriptions | 2 libraries |
| 301-400 subscriptions | 5 libraries |
| 401-500 subscriptions | 4 libraries |
| 500+ subscriptions | 9 libraries |
| Total | <hr/> 31 libraries |

Not surprisingly, when one adds donor assistance and gifts and exchanges to the internal funding base, the ability of these libraries to acquire serials is significantly improved. No library is entirely without journals, and more than half of them receive 300 or more journals. By the same token, however, were outside support to be withdrawn, almost every library would be hard put to subscribe to a reasonable number of journals.

Budgets, Planning, and Headaches

Budgets and Planning

All but a handful of libraries prepare annual budgets. Of the 20 libraries responding to our question concerning what percentage of their budget is approved, only two actually receive the entire amount requested—Abubakar Tafawa Balewa University and Bunda College of Agriculture. In the case of Bunda, the library "normally has guidelines that we can increase approximately

Approximately What Percent of Your Budget Request Is Approved Each Year?

| | |
|--------------|---------------------|
| don't know | 2 libraries |
| under 25 % | 4 libraries |
| 25 %-50 % | 2 libraries |
| 50 %-75 % | 7 libraries |
| above 75 % | 5 libraries |
| Total | 20 libraries |

12 percent over the previous year. The library and information budget is between five and seven percent of the university budget."

Sometimes budget approval can be deceptive, for it does not necessarily constitute delivery of funds. At Kenyatta University, the "total budget is normally approved, but funds may not be available." The University of Yaoundé Medical School Library has

not only seen a precipitous decline in its share of the university budget, but is doubly handicapped, for the library does not actually receive the entire amount allocated to it:

Le projet de budget présenté n'a aucun effet sur le montant des crédits alloués. Il était de 6 millions il y a quelques années, au cours de 1991-1992 le montant total était de 3.400.000 et par ailleurs ce montant n'a pas été effectivement payé à cause des difficultés de trésorerie d'où aucun abonnement n'a été payé par la bibliothèque.

Approximately what percentage of the library budget is used for:

- ___ % staff salaries
- ___ % book purchases
- ___ % journal subscriptions
- ___ % building improvements/maintenance
- ___ % other services and supplies

About one third of the libraries either did not give a breakdown on how its library budget is used or reported that staff salaries are handled separately. Of the remaining libraries, as little as 7 percent (National Mathematical Centre, Nigeria) and as much as 90 percent (Fourah Bay College, Sierra Leone) is allocated for salaries. By the same token, 80 percent of the National Mathematical Centre budget

goes for books and journals, 7 percent at Fourah Bay. Most libraries, however, earmark between 40 and 65 percent for salaries.

In their responses concerning budgets, several libraries have grouped accessions, both books and serials, together. Most of the remaining libraries spend about as much on journals as they do on books, except for the six institutions listed below. Of these, all but one favor journal subscriptions over book purchases.

- University of Ghana Medical School: 70 percent of the budget for journals and 10 percent for books
- Tropical Disease Research Centre (Zambia): 80 percent of the budget and 10 percent for books
- Chancellor College (Malawi): 56.74 percent of the budget for journals and 10.80 percent

for books

- Cheikh Anta Diop University(Senegal): 55 percent of the budget for journals and 5 percent for books
- University of Ibadan (Nigeria): 90 percent of its overall allocation for books and journals is earmarked for journals
- Muhimbili University College of Health Sciences (Tanzania): 9 percent of the budget for journals and 66 percent for books

Headaches

Budgeting and planning, never easy under the best of circumstances, can be complicated tremendously by a number of factors, some of which are unforeseen. Currency devaluations, for example, are formidable obstacles, and several Nigerian librarians commented on the hardships they face every time the *naira* goes down in value. The Librarian of Abubakar Tafawa Balewa University wrote that "at the current rate of 25 *naira* to the dollar, I should have about \$229,000 for books. Ten years ago, I would have been swimming in dollars--for at \$1.50 to N1, the same *naira* sum would have equaled over \$8 million." A Ghanaian librarian added that currency fluctuations sometimes require additional and unanticipated expenditures. His library "paid to the British Council an amount of 355,520 *cedi*, which is the equivalent of £440. Punctuation in the value of the *cedi* meant we had to make a supplementary payment..." This problem is further exacerbated by the escalating cost in the price of journal subscriptions, which the librarian of the University of Nairobi estimated increases at about 15 percent annually.

In addition, several libraries, including the University of Zimbabwe, indicated that delays in receiving information on foreign currency allocations have caused journal subscriptions to lapse. One frustrated librarian indicted the entire system: "The foreign currency allocation tends to be in favour of traders of goods other than books, periodicals, or any other educational materials. Even so, the university...administration has completely eroded the importance of supporting reading materials acquisition by not honouring their book budgets."

Although the UNESCO protocol on the importation of educational, scientific, and cultural materials bans duties on books and journals, not every country is a signatory to the agreement, including Ethiopia, Mozambique, Senegal, and Zimbabwe. Several libraries are charged duty or other government fees when they import journals and other scholarly literature from abroad. These fees range as low as five *naira* per carton in Nigeria to as high as 65 percent of the invoice in Mozambique. In Zimbabwe someone from the medical library must go to customs to clear CD-ROM databases whenever one arrives. Because no charge is involved, the library budget is not affected unless, of course, one calculates lost staff time. Perhaps the most egregious example is that of Côte d'Ivoire. The Telecommunications and Postal Ministry, which has been privatized, levies a charge on the university every time a package arrives. AAAS can no longer send journals to Abidjan because the library lacks the funds to pay the PTT. The only journals the university receives at the moment are being sent by various French agencies of cooperation via the French Embassy.

Several librarians complained about unpredictable patterns of mail delivery, which can result in missing issues. The University of Nairobi Medical Librarian wrote: "This past year their [the journals] arrival has been most erratic, with late issues arriving before earlier ones. The three months' time limit for claims by our subscription agency is unrealistic. Either we end up with many duplicate issues or we wait too long to claim them." Eduardo Mondlane University in Mozambique pays its fulfillment agency a 30 percent "air swift" surcharge, which provides for air mail shipment to Maputo and an immediate replacement of lost issues.

Only three libraries reported that they have not encountered problems with mutilation or theft of journals; two of the three restrict access to the serials collection. At Makerere University journals are kept under closed access, identity cards are used in issuing journals to readers, and there are security guards at the library entrance. The University of Zambia Medical School has introduced a number of measures similar to libraries elsewhere in Africa. Lecturers and researchers, but not students, are allowed to borrow journals; culprits who are found stealing or mutilating them "may lose their place in the university." Providing a photocopy service at subsidized rates has been a key strategy in counteracting this problem at many libraries.

Which Journals?

Core Collections

Given that the libraries in this study lack the luxury of subscribing to any but the most essential journals, what attempts have they made to prioritize their needs? Of the 30 libraries that answered our questions pertaining to establishing core collections, all but six answered in the affirmative. The lists of essential serials ranged from as few as 40 titles (Fourah Bay) to as many as 800 (University of Ghana). Not every library has assembled lists of core journals in every discipline, however. Makerere University in Uganda has prioritized journals in economics, education, chemistry, and medicine (with the most weight put on medicine). Core journal inventories are compiled, for the most part, in consultation with lecturers and researchers, supplemented by written materials, such as the Brandon-Hill list of key medical journals or, for agriculture, a comparable list prepared by the Food and Agriculture Organization.

| University of Ibadan Core Collection | |
|---|-------------------|
| Agriculture | 84 titles |
| Education | 63 titles |
| Humanities | 65 titles |
| Medicine | 31 titles |
| Science | 133 titles |
| Social Sciences | 82 titles |
| Technology | 69 titles |
| Total | 527 titles |

How realistic are these lists in light of the actual purchasing power of the institutions involved? We have data to answer this question for 16 libraries. Although the University of Ghana subscribes to fewer than half the serials it deems essential, many libraries have been able to do somewhat better. In fact, almost all are able to subscribe to more than 50 percent of the journals categorized as crucial, but not always without difficulty. The University of Ibadan, for instance,

subscribes to all 527 journals on its core list. At the University of Nairobi, in order to match needs to available resources, the medical librarian tasked her faculty members "to reduce the previous list of 303 titles (to which the university subscribed in 1987) to 151 which faculty felt they could not be without." The library now subscribes to all 151 journals, although in the previous academic year it received only 18 titles (one for each major discipline in the medical clinical sciences and three abstracting/indexing titles). Sometimes the results are mixed. The University of Science and Technology in Kumasi, Ghana, has a list of 540 core journals in the sciences (410 titles), social sciences (70 titles), and humanities (60 titles). Although the university has been able to subscribe to the majority of the required journals in the social sciences and the humanities, it has funding to acquire only 196 serials in the "pure and applied sciences." This latter finding is not surprising in light of the high cost of science journals.

African Journals

Because AAAS is also interested in tracking access to information on research conducted in Africa, we asked whether libraries subscribe to journals published on the continent, such as *Discovery and Innovation*. Almost half the libraries subscribe to some African imprints, especially in the medical and agricultural sciences. In addition to *Discovery and Innovation*, titles mentioned include the *East Africa Medical Journal*, the *Central African Medical Journal*, the *Zimbabwe Journal of Agricultural Research*, and the *East African Agricultural and Forestry Journal*.

Lack of foreign currency was cited most frequently as a significant problem in subscribing to African journals. The librarian of Makerere University gave two more reasons why he does not subscribe to African titles: "1) Most of the African journals are possibly not known by teaching staff who recommend titles to be subscribed by the library. 2) Our purchasing system is not flexible enough to be able to make direct purchases with African publishers, as the overseas agents often find it hard to get these journals." The University of Nairobi Medical School attempts to circumvent foreign currency difficulties by purchasing locally published journals, such as the *East African Medical Journal*, and arranging for exchanges in order to receive journals published elsewhere in Africa.

Efforts are underway, however, to enhance the availability of African journals in African libraries. In the UK a pilot project is under consideration to provide African journals to selected African universities, which would both serve to shore up the precarious circulation base of these journals and simultaneously make them better known on the continent. About 12 titles have initially been chosen for inclusion in this program.⁷ Two other attempts to improve the

⁷In 1991 Carol Priestley of the International African Institute (IAI) wrote 38 African publishers to ask whether they thought an African journals program would be a useful project on which to work and to request details on their journals. Twenty five publishers responded, all of them affirmatively. Based on requests that IAI has received from African research libraries, 12 serials have been selected for inclusion in the project. For further information, contact Carol Priestley, International African Institute, London School of Economics, Connaught

visibility of African serials are worth noting: With partial funding from the Rockefeller Foundation, the Library of Congress Office in Nairobi, Kenya, publishes a *Quarterly Index to Periodical Literature, Eastern and Southern Africa*, which is distributed free of charge. In addition, the annual Zimbabwe International Book Fair is planning a special exhibit at the 1993 Fair of African scholarly journals, which might then travel to England and the United States. And finally, in order to engender economies of scale and make publishing more efficient, the University of Zimbabwe is planning an innovative project that will assist both the university and country's scholarly publishers. Describing the benefits of this publications service, the UZ Publications Officer wrote AAAS:

Many reputable journals are produced by research societies and institutions in Zimbabwe, but most struggle for want of full-time publishing staff. In addition, production costs tend to be high, and insufficient attention to marketing means that subscription income is perhaps not as large as it could be.

The UZ Press envisions offering a service whereby it undertakes (or arranges) the copy-editing, design, typesetting, and printing of the journals, as well as handling subscriptions and marketing. A centralized service of this nature would thus free editors to concentrate on the selection of material and would optimize staff, equipment, and subscription-fulfillment costs. From the point of view of library services and subscription agents, the UZ Press would be a convenient "one-stop shop" for Zimbabwean scholarly journals.⁸

Reader Services and Utilization of the Library

Few of the libraries circulate current contents information on a regular basis because of lack of staff, inoperative photocopy machines, or paper shortages. In any case, most prefer to publicize accessions through special displays of current literature because display racks permit browsing.

Some libraries, however, particularly those with a national mandate, do disseminate current contents information in print form. The National Mathematical Centre of Nigeria is an excellent example of this. The library prepares a monthly bulletin listing its accessions (monographs, reports, preprints, and journals). Two copies are sent to every university in Nigeria—one to the main library and one to the Department of Mathematics. Selected institutions and "friends of the Centre" abroad also receive a copy, for exchange purposes. The Centre will then photocopy articles on request.

Thirteen libraries perform Selective Dissemination of Information (SDI) services, done either manually or by downloading citations from CD-ROM databases. At Kenyatta University, SDI is handled by discipline, i.e., the librarian prepares current awareness information for each of the university's 30 departments. Several libraries, among them Cheikh Anta Diop University,

House, Houghton Street, London WC2A 2AE, UK.

⁸For further information, contact Roger Stringer, Publications Officer, University of Zimbabwe, P.O. Box MP 203, Mount Pleasant, Harare, Zimbabwe.

the University of Dar es Salaam, the University of Zimbabwe, and the Kenya Agricultural Research Institute (KARI), prepare user profiles for specialized SDI services, which focus on the individual interests of the researcher or student. KARI, for example, assists some 100 lecturers and 400 researchers through its SDI activities. Unfortunately, few libraries keep records of documents requested as a result of SDI, KARI being one of the few exceptions; it received 300 requests for photocopies in 1990 and 1991.

Approximately half of the universities included in this study reported that students constitute approximately 40 percent or more of those using the periodicals collection. At the University of Dar es Salaam, which receives a respectable number of journals, 76 percent of the users are students; 22 percent are faculty and researchers; and 2 percent come from outside the university. (We grouped all students together rather than requesting statistics for undergraduate and postgraduate students separately.) Even taking into consideration that students make up a larger percentage of the university population than faculty, the answers to this question were unexpected. In fact, we were pleasantly surprised to learn that so many students are using their library's journals collection.

Equipment

Photocopy Machines

Difficulties with photocopy machines abound--everything from maintenance problems to lack of paper. Every library, except for the one located at the Kenya Agricultural Research Institute, charges users, sometimes on a sliding scale, for photocopy services, but only about one third of these libraries actually recover all their costs (including each of Ghana's three universities). At the University of Nairobi Medical School, for example, page charges cover machine maintenance and paper only, but not electricity or staff costs.

Four libraries have attempted to use commercial services with varying success. At the University of Yaoundé Medical School, the librarian contracted with a commercial service, but the vendor withdrew his machine after several weeks because the service, which charged 30 CFA per page, was not sufficiently profitable. At Addis Ababa University, the local dealer has not yet responded to requests to install a photocopy machine in the library there. The University of Zimbabwe and the University of Nigeria, however, have utilized commercial services effectively. Interestingly, although neither university can recover the costs it incurs for its own photocopying services, the commercial services, also in operation, work well, even though their charges are exactly the same as those levied by the universities themselves--N1 in the case of Nigeria and 20 cents in the case of Zimbabwe.

Computers

All but five libraries have at least one microcomputer, about half of them purchased locally. With six microcomputers in the main library and six in the Medical Library, the University of Zimbabwe is the best equipped of any of the libraries surveyed. Cheikh Anta Diop University, which has acquired 10 pcs for the main library, comes next. The remaining libraries have between one and five microcomputers each. With the exception of the University of Nairobi,

the microcomputers are standalone systems. The University of Nairobi Institute of Computer Sciences has installed a local area network (LAN) for the entire university, which is run off a mainframe that is located at the Institute. The Medical Library, for example, has five dumb terminals, but also expects to acquire an IBM microcomputer in 1993. Another university with networking in mind is the University of Malawi, which plans to create a LAN for the six microcomputers in its Central Library Services Unit.

In a handful of instances the computers were bought with internal funding, sometimes a university research grant, but donor support is responsible for most of these purchases. International organizations and foundations listed include: CTA, the Carnegie Corporation of New York, IDRC, the Health Foundation, the Rockefeller Foundation, SAREC, and a number of UN agencies. Kenyatta University and the University of Zimbabwe have both received gifts from local groups in order to acquire their equipment.

Almost every library possesses CDS/ISIS software, which was developed by UNESCO and is provided free of charge to developing country institutions. Other commercial software packages being utilized include Word Perfect, Word Star, D-Base, and, in one instance, Lotus. The University of Ghana has also developed its own in-house database software.

CD-ROM

Libraries with CD-ROM Capability

Addis Ababa University
Cheikh Anta Diop University
Eduardo Mondlane University Agriculture Library
Institute for Agricultural Research
Kenyatta University
Muhimbili College of Medicine
University of Dar es Salaam
University of Ghana (Balme Library and
Medical Library)
University of Ibadan
University of Malawi (Bunda College of
Agriculture, Central Library Services
Unit, and College of Medicine)
University of Nairobi
University of Science and Technology
University of Yaoundé Medical Library
University of Zambia Medical Library
University of Zimbabwe (Main Library and
Medical Library)

Nineteen libraries have CD-ROM capability, and two are expecting to acquire their CD-ROM drives this year--the University of Nairobi Medical Library and Abubakar Tafawa Balewa University. The University of Ibadan Medical Library uses the CD-ROM workstation located at the main university library about seven kilometers away. In two cases--Sokoine University of Agriculture and the University of Nairobi College of Health Sciences--although the library does not have a CD-ROM unit, departments within the universities have received drives through external funding. In neither instance, however, is the wider university community welcome to use these workstations.

CD-ROM is a new technology in

many African countries. An earlier AAAS report⁹ detailed the problems librarians have encountered in installing and maintaining their systems, and the situation does not seem to have improved appreciably in the last two years. The University of Science and Technology in Ghana, for instance, has not been able to use two CD-ROM databases provided by AAAS because of difficulties in configuring the config.sys and autoexec.bat files. These problems are not insurmountable, by any means, but, for an institution with no CD-ROM experience, they have been somewhat daunting. Because the local dealer in Kumasi was unable to help, the librarian wrote AAAS for assistance. At the Institute of Agricultural Research in Ethiopia, the system was down for almost a year because the CD-ROM installation software was lost in the course of moving from one building to another. And at Eduardo Mondlane University in Mozambique, literature searches have had to be performed at the Ministry of Agriculture because the Faculty of Agriculture's CD-ROM drive has been out of order.

A handful of libraries with CD-ROM capability do not have subscriptions to any databases, in two instances because the drives were acquired so recently. Lack of funds to purchase subscriptions was cited as a contributing factor by at least two additional libraries.

Perhaps because there is such a heavy concentration of donor interest in medicine and agriculture,¹⁰ database subscriptions in these two disciplines predominate. *MEDLINE*, *CAB Abstracts*, *AGRIS*, *AGRICOLA*, and *TROPAG & RURAL* are the databases most commonly cited. Several libraries receive *POPLINE*, which is available to developing countries free of charge from the Johns Hopkins University Center for Communication Programs. One or two libraries have subscriptions to *Biological Abstracts*, the *Life Sciences Collection*, *Science Citation Index*, and *Social Science Citation Index*. The latter two databases, which are published by the Institute for Scientific Information (ISI), each cost \$10,000 annually, which puts them beyond the reach of most sub-Saharan African libraries. Even the ISI discount of up to 50 percent for developing country institutions does not make an appreciable difference in the ability of these libraries to acquire these databases. Cheikh Anta Diop University is the only library in this study to have acquired a significant number of CD-ROM databases in the social sciences. In addition to the *Social Science Citation Index*, the library subscribes to *Econlit*, *Psyclit*, and *Sociofile*. Cheikh Anta Diop is also the only library of the 18 to subscribe to *Dissertation Abstracts* on CD-ROM.

⁹*Computer and CD-ROM Capability in Sub-Saharan African University and Research Libraries*, Lisbeth A. Levey, AAAS, 1991.

¹⁰The Technical Centre for Agricultural and Rural Cooperation (CTA) supports CD-ROM at three of the libraries in the AAAS survey--Bunda College of Agriculture, the Institute for Agricultural Research, and the University of Ibadan. CTA projects provide hardware, training, database subscriptions, and some document delivery. In all, libraries in 15 African countries are supported by CTA. See *CD-ROM for African Research Needs: Some Basic Guidelines*, AAAS, Washington, DC, 1993, for a list of organizations implementing or funding CD-ROM projects.

About two thirds of the libraries allow users to conduct their own literature searches. The University of Zimbabwe Medical Library has installed a dedicated end-user workstation and provides formal CD-ROM training for students and faculty members. Although the majority of libraries reported that lecturers or researchers are their heaviest users, two libraries indicated extensive usage by students. At Cheikh Anta Diop University, 40 percent of the searches are carried out by students, and at Bunda College of Agriculture the ratio is about 50-50.

Cheih Anta Diop University is the only institution, thus far, to charge for CD-ROM services. Effective this year, the library has instituted a sliding scale of charges to cover CD-ROM costs: 2,000 CFA per search for students and 5,000 CFA for lecturers and researchers. The library conducted an informal survey in 1992, which ascertained that users would be willing to pay these fees.

| <i>Institution</i> | CD-ROM Searches | | |
|---|-----------------------------------|-------|---------------------|
| | <i>Number of Searches</i> 1990 | 1991 | 1992 (through June) |
| Addis Ababa University | ---- | 86 | 70 |
| Bunda College of Agriculture | ---- | ---- | 142 |
| Cheikh Anta Diop University | 285 | 370 | 500 |
| Eduardo Mondlane University | ---- | ---- | 15 |
| Muhimbili Medical Library | ---- | 39 | 143 |
| University of Ghana Medical Library | 155 | 361 | 247 |
| University of Zambia Medical Library | ---- | ---- | 140* |
| University of Zimbabwe Medical Library | 931 | 1,251 | 1,195 |

*Through December 1992. Service began in July 1992

As shown above, some, but not all, libraries actively promote their CD-ROM services, which can result in dramatic growth in demand for CD-ROM literature searches, such as at the University of Zimbabwe Medical Library, where 400 searches were conducted in March 1993 alone. The library, which is the Zimbabwe's only medical library, is responsible for supplying information support to health practitioners and researchers on a national basis, through the publication of a quarterly bulletin *Current Health Information Zimbabwe*. The University of Ghana Medical Library publishes a similar quarterly for some 800 faculty members and 700 medical practitioners located in various parts of the country, and had requests for more than 1,200 articles in the period between October 1990 and September 1991. What is striking about the efforts in both Zimbabwe and Ghana is that in both cases publication costs for the bulletins are being borne locally--in Zimbabwe by the Ministry of Health and in Ghana by the Medical

School administration. Regionally, Cheikh Anta Diop University is a resource center for seven francophone libraries, and conducts literature searches for researchers in Côte d'Ivoire, Togo, and Mali. And INFO-MED at the University of Zambia is perhaps the most dramatic example of how to combine technology and ingenuity to create new ways to access research information.¹¹

INFO-MED at the University of Zambia

INFO-MED couples CD-ROM with electronic networking. Zambia's health professionals can now transmit e-mail messages either via a low earth orbit (LEO) satellite or through a terrestrial telephone-based FIDONET network. The satellite groundstation was installed by SatelLife, an organization based in Cambridge, Ma., as part of an African health information network, HEALTHNET. To complete the package, the Medical Library received a CD-ROM workstation and subscription to MEDLINE from the Health Foundation. This is being supplemented by the AAAS, which is providing a subscription to the *Compact AIDS Library*, a CD-ROM database containing full-text articles as well as abstracts and bibliographic references.

The University of Zambia Medical Library carries out literature searches for lecturers, researchers, and students in Lusaka, as well as for practitioners and researchers located in district hospitals and research centers throughout Zambia. Requests for INFO-MED CD-ROM services from outside of Lusaka are funnelled to the library via the terrestrial e-mail system. SatelLife has twinned the University of Florida Medical Library with its counterpart in Lusaka for document delivery services. Requests for full-text literature are sent to Gainesville via the LEO satellite connection. Because the e-mail system does not yet support transferring these documents electronically, the University of Florida has resorted to sending them by mail, on a monthly basis, and uses the services of the Zambian Mission to the United Nations.

But success sometimes creates its own set of dilemmas. The popularity of INFO-MED in Zambia has put a strain on the lone CD-ROM workstation, resulting in the need to ration time carefully. Because of increased demand, searches are now limited to 30 minutes per person, which leaves many INFO-MED users dissatisfied and frustrated.

¹¹In January 1993, in conjunction with the Eighth General Conference of the Association of African Universities and with funding from UNESCO, IDRC, and CTA, AAAS organized a workshop for African research librarians on how to market CD-ROM services. Eighteen librarians participated in the workshop, each of whom prepared reports on CD-ROM activities in his or her institution. AAAS will publish a CD-ROM marketing manual later this year, which will be available free of charge.

Once a literature search is conducted, many librarians have difficulty supplying full-text articles on demand from their own (or nearby) library stacks. And, except for CTA, few donors include document delivery as an integral part of their grants. CTA CD-ROM assistance covers up to 1,000 pages annually free of charge. The Bunda College of Agriculture is one of the few institutions that has been able to obtain documents with no inconvenience. With a healthy journals collection of its own, access to an active national agricultural information network, and some external support, the library can satisfy most literature requirements.

Document delivery can be expensive. Many African libraries use the British Library Document Supply Centre, albeit sparingly, because the British Library charges £5.00 for up to ten photocopied pages. Thus, for cash-strapped libraries, document delivery is a luxury that many cannot afford.

Some Document Delivery Coping Strategies

- ***Agricultural Libraries Information Network*** (A worldwide cooperative network of libraries from developing and industrialized countries, sponsored by FAO.)
- ***British Medical Association*** (Discounted photocopy service subsidized by British Council. £3.30 for airmail and £9.00 for facsimile.)
- ***British Library Document Supply Centre*** (£5 for up to 10 photocopied pages)
- ***French Medical Schools*** (The libraries of the University of Bordeaux and the National School of Public Health in Rennes provide free photocopy services to developing countries.)
- ***National Institute for Scientific and Technical Information*** (INIST provides both bibliographic searches and document delivery, with an emphasis on francophone publications. 45 French francs/10 photocopied pages.)
- ***National Library of Medicine*** (Free to developing country institutions through special arrangement with WHO.)
- ***Southern Africa Inter-Library Loan Coupons*** (14 Rand/10 photocopied pages.)

Medical librarians are generally better off than their colleagues in other libraries; WHO has worked out an agreement with the US National Library of Medicine (NLM) to supply photocopies to African medical libraries. The process is cumbersome, however. Requests go to WHO/Brazzaville or Geneva before they are forwarded to the NLM. In addition, the British Council has arranged for document delivery assistance in a number of African countries through the library of the British Medical Association, which provides discounted photocopies to selected

institutions.¹²

Some university libraries, such as the University of Zambia Medical Library, have benefitted from twinning programs in securing document delivery. Twinning arrangements exist between African institutions, as well: the University of Zimbabwe Medical Library, for example, is assisting the Center for Health Information in Mozambique by supplying free photocopies on request.¹³ The University of Zimbabwe also trades services with three South African university libraries. It exchanges roughly the same number of documents with the Universities of Cape Town, Durban, and Stellenbosch, thereby avoiding the need "to swop coupons." In addition, UNESCO has underway a pilot project to provide discounts to developing country libraries when they purchase British Library coupons.

Observations

African research libraries were struggling for survival six years ago at the inauguration of the AAAS journals initiative, and scores continue in the same position today. Although a few libraries are able to meet user needs, most find it difficult to balance supply and demand. With the exception of a handful of institutions, among them Abubakar Tafawa Balewa University, Bunda College of Agriculture, Cheikh Anta Diop University, and the University of Zimbabwe, administrators do not place library services at the top of their list of priorities. This despite the fact that good research libraries are key to research, teaching, and staff retention. Currency devaluations, coupled with spiraling subscription costs, have seriously exacerbated the problem of funding shortfalls, thereby reducing still further the ability of even well-off libraries to maintain their journal collections.

Without external funding, many libraries would have few current journals on their shelves. But donor support raises its own set of dilemmas, which revolve around the dreaded term "sustainability." Because few foundations or aid agencies are prepared to underwrite projects indefinitely, many libraries are forced to use up their grant funds over a specified and generally short-term period of time. Although this requisite does not noticeably affect the purchase of books, it can have an extremely deleterious effect on rational journal acquisitions. The University of Ibadan Medical Library is a case in point. The library, which now subscribes to 56 journals, has established a core list of 120 essential journal titles, but plans to subscribe to

¹²Volume 3, Number 2, of *Liaison*, the newsletter of the WHO Office of Library and Health Literature Services, included articles on document procurement and transfer. Copies of this newsletter can be obtained by writing WHO at 1211 Geneva 27, Switzerland. In addition, the US National Agricultural Library has prepared a manual (still in draft form) on document access and delivery. For further information on its availability, write: Office of the Director, NAL, 100301 Baltimore Boulevard, Beltsville, Md. 20705, USA.

¹³The University of Zimbabwe Medical Library is organizing a workshop for medical librarians from Southern Africa, to be held in Harare in early 1994, to promote more effective resource-sharing within the region.

about 400 journals once the World Bank loan takes effect. The issue is not whether these 400 titles are important, rather whether the university might not be better off maintaining a smaller core collection over a longer period of time. In fact, Makerere University is an example of just what can happen when outside funding is exhausted: the library's journal subscriptions have shrunk from 700 in 1991 to 200 titles a year later.

The scenarios at the University of Ibadan and Makerere University point to two basic problems in what appears to be a "feast or famine" approach to library acquisitions. The first, and most obvious, difficulty relates to lack of money and the sometimes unreliable nature of outside support. The second concerns priorities. Rather than subscribe to many journals when times are good and none during periods of scarcity, librarians and researchers need to make hard decisions about which journals are absolutely essential in order to ensure uninterrupted runs of these core titles. This approach also means, however, that university administrators must be committed to maintaining their libraries and able to make long-range budget projections. Not a simple requirement under the best of circumstances. Additionally, the fit between the grant process and library budgets and acquisitions, particularly serials, is uneasy at best. We realize that adjusting one to the other would not be simple, but wonder whether some alterations in grant giving might not be possible in view of the fact that both sides are committed to better access to research literature.

Many libraries have established lists of core journals, but, disappointingly, few use their SDI or CD-ROM services to examine which journals are really in demand. What better way, for example, to decide whether a journal subscription should be renewed or cancelled than to examine the number of times it is requested following CD-ROM literature searches? Even libraries with severe staff shortages might be able to come up with simply maintained strategies to track reader utilization of journals.

Although CD-ROM technology has transformed an otherwise bleak information future into one that offers hope, it must not be taken as a panacea that can cure all ills. First of all, few African libraries have the capacity to satisfy the demand for information that access to CD-ROM databases creates. Most of the research libraries with which AAAS is familiar have one, possibly two, CD-ROM workstations, which severely limits the number of users who can be accommodated daily. This situation, coupled with the inability of many libraries to provide timely and reliable document delivery, can result in dashing expectations rather than satisfying them. And finally, there is a desperate need for more expertise in Africa, so that installation, maintenance, troubleshooting, and training in CD-ROM and related technologies can take place without outside intervention.

In separate comments to AAAS, two medical librarians have presented us with the *yin and yang* of CD-ROM in sub-Saharan Africa, which, taken together, juxtapose hard questions concerning implementation with a sense of what CD-ROM can accomplish:

Most of the CD-ROM workstations and computers in libraries in Nigeria are free donations. For how long are we going to depend on donations? When the donations

cease, what happens? The major problem is maintenance and technical knowhow, which is lacking in Nigeria and most other developing countries. I love what one can achieve with this information technology and look forward to having it in my library, but will there be funds to sustain subscriptions to the CD-ROM databases and the consumables? In the meantime we continue to write proposals for donations and pray that one day the library culture will be fully entrenched in our society and government.



Where there is a lack of resources, the demand for information tends inevitably to decline. Seeking information becomes a frustrating experience; isolation from information increases. However, the reverse is also true. Since we have acquired CD-ROM capability at the Medical Library, we have seen a steady and significant increase--not only in the demand for MEDLINE searches, but also in the use of our journals and of our interlibrary loan service. Our statistics of library use demonstrate that by satisfying the demand for bibliographic searches, we have renewed an appetite for and dependency on information.

Altogether, CD-ROM has been an enormous boon to African research libraries: It has not only improved access to current information, it has also increased demand for it. The trick is to create an environment that will permit CD-ROM to be used to its full potential in sub-Saharan Africa. AAAS is now considering the possibility of a pilot project in a small number of universities that would couple the provision of key CD-ROM databases in the sciences and social sciences with reliable document delivery assistance in order to assess the ability of CD-ROM to supplement and even replace journal subscriptions and to determine the real costs of CD-ROM so that African institutions will be better able to evaluate the tradeoffs and advantages of the technology.

In conclusion although the condition of African research libraries is indeed parlous, it is not unalterably bleak. Information technologies, such as CD-ROM and now electronic networking,¹⁴ hold enormous potential. Combined with sustained funding and an imaginative outlook, these technologies have the ability to revolutionize the capacity of libraries to fulfill their mandate.

¹⁴See *Electronic Networking in Africa: Advancing Science and Technology for Development*, African Academy of Sciences/American Association for the Advancement of Science, 1992. The summary report or the workshop proceedings volume can be obtained free of charge by writing AAAS in Washington, DC.

Appendix One

AAAS Sub-Saharan Africa Program

The AAAS Sub-Saharan Africa Program was inaugurated in 1987, representing a concerned response on the part of US scientists and educators to the institutional crisis that their African colleagues were facing, and a commitment on the part of US scientific societies and donors to attempt to work with African institutions in order to address that crisis. The goals of the program are to:

- promote capacity-building for science, technology, and development in Africa; and
- foster effective, long-term partnerships between the scientific and academic communities of the United States and their counterparts in Africa.

To date program activities have concentrated on improving access for African researchers to scientific and technical information and science and technology for development.

Science and Technology Information

Several AAAS activities are explicitly designed to facilitate communications within the African research community and with scientific colleagues abroad.

Project for African Research Libraries

Starting in 1987 with an initiative to provide African libraries with subscriptions to journals in the sciences and the humanities, this project has broadened its focus to incorporate activities promoting CD-ROM usage and strengthening the institutional capacity of research libraries.

Journal Distribution

In partnership with US scientific and learned society publishers, AAAS is able to supply almost 200 journal titles in the sciences and humanities to research libraries in 38 sub-Saharan African countries. As a result of this effort, over 3,000 subscriptions reach African institutions hard put to find funding to maintain their serials collections. These prestigious journals are provided to AAAS at little or no cost. Grants cover air freight shipment to Africa. In 1991 AAAS was able to supplement the print journals already in the program with a number of bibliographic and full-text databases on compact disc.

CD-ROM Initiatives

AAAS activities in the area of CD-ROM concentrate on enhancing the environment for CD-ROM usage in sub-Saharan Africa. AAAS has held a number of "sensitization"

seminars for African decisionmakers and a workshop for African research librarians on marketing CD-ROM services. In addition, the Sub-Saharan Africa Program is launching a biannual newsletter, *CD-ROM for Development*, available at no cost by writing AAAS.

Strengthening the Capacity of African Research Libraries

AAAS is engaged in a number of initiatives to promote communication among African librarians and to examine the capacity of research libraries to provide services. The Program publishes a biannual newsletter, *Notes*, for African librarians. AAAS has conducted several studies as well, all resulting in reports available free of charge:

- *Computer and CD-ROM Capability in Sub-Saharan African University and Research Institute Libraries* (1991)
- *Confronting the Demand for Scientific and Scholarly Literature in Portuguese: An Assessment of African Needs and How to Meet Them* (1992)
- *CD-ROM for African Research Needs: Some Basic Guidelines* (1993)
- *A Profile of Research Libraries in Sub-Saharan Africa: Acquisitions, Outreach, and Infrastructure* (1993)

In addition, the University of Zimbabwe and AAAS are coorganizing a workshop for African university librarians on strategic planning issues. The workshop, which is timed to coincide with the Zimbabwe International Book Fair, will take place in Harare in August 1993. The University of Zimbabwe and AAAS will copublish a report in late 1993, which will include selected workshop papers.

Enhancing Electronic Access to STI

One means with great potential for reducing the isolation of African scientists and engineers is the use of electronic networking and communications systems, which are integral to the conduct of normal science today in the United States, but generally poorly developed within the African scientific community. Increasingly AAAS has been involved in efforts to address essential policy and other requisites needed for successful electronic communications in sub-Saharan Africa.

Workshops on S&T Communication Networks in Africa

In August 1992 the African Academy of Sciences and AAAS coorganized a Workshop on Science and Technology Communication Networks in Africa. Forty participants, representing virtually every noncommercial network in the region, came to Nairobi for this meeting, the first of its kind. Attendees included technical experts as well as administrators and endusers, who assembled to review and assess their experiences with scientific/academic networking in sub-Saharan Africa and to address significant policy issues. A summary report and a proceedings volume, *Electronic Networking in Africa: Advancing Science and Technology for Development*, are available at no cost from AAAS.

Follow-on activities to the August 1992 Nairobi meeting include a December 1993 workshop in Accra, Ghana, aimed at enhancing opportunities for electronic networking among West African universities and research institutes, coorganized with the African Association of Universities.

User's Guide to Academic Networking in Africa

In line with a recommendation at the Nairobi workshop to encourage the production and distribution of more "information on information" for African institutions, AAAS is preparing a user's guide to noncommercial electronic networks operating in the region. This manual will build on existing information sources and include directions on accessing extant network addresses in Africa, thus promoting interchanges between researchers and teachers throughout sub-Saharan Africa as well as facilitating electronic communication with their colleagues elsewhere in the world.

Online Access for African Research Institutions

AAAS is beginning a preliminary examination of the needs within African institutions for online access to databases and information sources and the means by which some of those needs are being met under present circumstances, with an eye toward fostering reliable, cost-effective access in the future.

Science and Technology for Development

AAAS is enhancing awareness of science in sub-Saharan Africa--its accomplishments and future challenges--through outreach to US audiences. At the same time the Program provides advice and consultation on science-based problems affecting the region.

Meetings and Publications on *Science in Africa*

Beginning in 1991 AAAS has organized a series of meetings in the United States, aimed at informing US scientists, policymakers, and the donor community about critical science and science policy issues affecting sub-Saharan Africa. These innovative *Science in Africa* sessions have had an impact not only in the United States, but also on the continent. Presenters have included some of Africa's most prolific researchers and seasoned administrators, as well as outstanding graduate students just embarking upon scientific careers. *Science in Africa* activities have included the following meetings and resultant publications, available from AAAS:

- *Science in Africa: Achievements & Prospects* (1991)
- *Science in Africa: Setting Research Priorities* (1992)
- *Science in Africa: Innovations in Higher Education* (1992)
- *Science in Africa: Career Strategies for Graduate Students* (1993)
- *Science in Africa: Women Leading from Strength* (expected in 1993)

Appendix Two

Libraries Included in This Study

Cameroon

Université de Yaoundé
Centre Universitaire des Sciences de la Santé
Yaoundé, Cameroon
Telephone: 237-31-06-51 or 31-06-61
Telefax: 237-31-12-24
Contact: Vincent Boumsong, Librarian

Ethiopia

Addis Ababa University Libraries
P.O. Box 1176
Addis Ababa, Ethiopia
Telephone: 251-1-115673
Telefax: 251-1-552688 or 550911
Telex: 21205 UNIV ET
Contact: Adhana Mengste-Ab, University Librarian

Institute of Agricultural Research
P.O. Box 2003
Addis Ababa, Ethiopia
Telephone: 251-1-612633
Telefax: 251-1-611222
Contact: Gashaw Mengestu, Librarian

Ghana

University of Cape Coast
University Post Office
Cape Coast, Ghana
Telephone: 2482
Telex: 2552 UCC GH
Contact: Richard Arkaifie, Deputy Librarian

University of Ghana Balme Library
P.O. Box 24
Legon, Accra, Ghana
Telephone: 233-21-775309
Telex: 2556 UGL GH
Contact: S.N. Amanquah, Acting Librarian

University of Ghana Medical Library
P.O. Box 4236
Accra, Ghana
Telephone: 233-21-665401 (ext. 597)
Telefax: 233-21-668425
Contact: Daniel B. Addo, Medical Librarian

University of Science and Technology
Kumasi, Ghana
Telephone: 5884
Telex: 2555 UST GH
Contact: S.A. Afre, Librarian

Kenya

Kenya Agricultural Research Institute
PO Box 30148
Nairobi, Kenya
Contact: E.M. Kamumbu, Librarian

Kenyatta University Moi Library
P.O. 43844
Nairobi, Kenya
Telephone: 810901
Telefax: 810579
Telex: 225483 KEN UNIV.KA
Contact: J.M. Ng'ang'a, Librarian

University of Nairobi
P.O. Box 30197
Nairobi, Kenya
Contact: Mary Kimani, University Librarian

University of Nairobi Medical Library
P.O. Box 19676
Nairobi, Kenya

Telephone: 726300 (ext. 43375)
Contact: Rosemary Kiathe, College Librarian

Malawi

University of Malawi, Bunda College of Agriculture
P.O. Box 219
Lilongwe, Malawi
Telephone: 265-277348
Telefax: 265-277251
Telex: 43622 BUNDA MI
Contact: Margaret Ngwira, College Librarian

University of Malawi, Chancellor College
P.O. Box 280
Zomba, Malawi
Telephone: 265-522222
Telefax: 265-523255
Contact: Steve S. Mwiyeriwa, University Librarian

Mozambique

Universidade Eduardo Mondlane
C.P. 1169
Maputo, Mozambique
Telephone: 258-1-490081/9
Telefax: 258-1-492192
Telex: 6718 UEM MO
Contact: Wanda do Amaral, Head of Documentation Services

Nigeria

Abubakar Tafawa Balewa University
PMB 0248
Bauchi, Nigeria
Telephone: 077-43724
Contact: Adebimpe O. Ike, University Librarian

Institute of Agricultural Research and Training
PMB 5029
Ibadan, Nigeria
Telephone: 022-312523
Telex: 312861

Contact: B.O. Ikhizama, Senior Librarian

National Mathematical Centre
Block 11, Zone 3, Wuse District
PMB 118
Abuja, Nigeria

Telephone: 09-5230617
Telefax: 09-5230782
Contact: James O. Daniel, Librarian

University of Ibadan Kenneth Dike Library
Ibadan, Nigeria

Telephone: 400550-400614 (65 lines) (ext. 1496, 2230)
Telex: 31233 IBALIB NG
Contact: Olufunmilayo G. Tamuno, University Librarian

University of Ibadan E. Latunde Odeku Medical Library
Ibadan, Nigeria

Telephone: 02-400010-400029 or 410519
Contact: O.O. Akhigbe, Medical Librarian

University of Jos

P.M.B. 2984

Jos, Nigeria

Telephone: 55934 (ext. 223)
Telex: 81136 UNIJOS
Contact: Audrey B. Ojoade, University Librarian

University of Nigeria Nnamdi Azikiwe Library
Nsukka, Nigeria

Telephone: 042-771444
Telefax: 042-770644
Telex: 5149 ULIONS NG
Contact: Mathew Egbunike Okafor, Chief Librarian

Senegal

- Université Cheikh Anta Diop

BP 2006

Dakar, Senegal

Telephone: 221-246981
Telefax: 221-242379
Contact: Henri Sene, Director

Sierra Leone

University of Sierra Leone, Fourah Bay College
PO Box 87
Freetown, Sierra Leone
Telephone: 227337
Contact: Deanna Thomas, College Librarian

Tanzania

Muhimbili University College of Health Sciences
PO Box 65012
Dar es Salaam, Tanzania
Telephone: 27081 (ext. 266)
Telefax: 255-051-46229
Telex: 41505 MUHMED
Contact: Cecil R. Magembe, Head, College Library

Sokoine University of Agriculture
P.O. Box 3022
Morogoro, Tanzania
Telephone: 056-4639
Telex: 55308 UNIVMO

University of Dar es Salaam
P.O. Box 35092
Dar es Salaam, Tanzania
Telephone: 48235
Telex: 41561 UNIVIP or 41327 UNISCIE
Contact: John Newa, Director

Uganda

Makerere University
PO Box 16002
Kampala, Uganda
Telephone: 531041
Contact: James Mugasha, University Librarian

Zambia

Tropical Disease Research Centre
PO Box 71769

Ndola, Zambia

Telephone: 260-2-610961-4

Telefax: 260-2-614487

Contact: C.J.J. Chisanga, Principal Medical Librarian

University of Zambia Medical Library

PO Box 50110

10101 Lusaka, Zambia

Telephone: 260-1-250801

Telefax: 260-1-253952

Contact: Regina Cammy Shakakata, Medical Librarian

Zimbabwe

University of Zimbabwe

PO Box MP 45

Mount Pleasant

Harare, Zimbabwe

Telephone: 263-4-303211

Telefax: 263-4-33583

Telex: 26580

Contact: Devi Pakkiri, Acting University Librarian

University of Zimbabwe Medical Library

PO Box MP 45

Mount Pleasant

Harare, Zimbabwe

Telephone: 263-4-791631 (ext. 238)

Telefax: 263-4-795019

Contact: Helga Patrikios, Medical Librarian

Appendix Three

AAAS Questionnaire

Please attach additional sheets if necessary.

I. BACKGROUND

A.1 Name of University/Institution Library:

A.2 Address:

A.3 Telephone: Cable:

Telex: Telefax:

A.4 Name and Title of Person Completing Questionnaire:

II. THE LIBRARY

B.1 Total Number of Librarians:

B.2 How many library staff members have degrees in library science?
Please give details.

III. FUNDING THE LIBRARY'S JOURNAL COLLECTION

C.1 How many journal subscriptions is your library receiving in the 1991/1992 academic year?

C.2 Does this represent a change from previous years (up or down)?

___ significant increase ___ small increase
___ significant decrease ___ small decrease ___ no change

C.3 If the number of journal subscriptions to which your library subscribes has gone up or down, please give details, particularly in what disciplines the number of journals has changed.

C.4 How many of your journal subscriptions are:

- _____ paid for through your library's budget
- _____ paid for through donor agency grants
- _____ donated by the AAAS or some other agency
- _____ received through an exchange with another library or organization

(Please give approximate numbers or percentages if you do not have an exact count.)

C.5 If your library has received a grant from a donor agency to purchase journal subscriptions, please provide details:

| Name of Donor | Amount of Grant | Duration of Grant | Disciplines Covered |
|---------------|-----------------|-------------------|---------------------|
| | | | |

C.7 What has been the general effect of the AAAS Journal Distribution Program on your library's operations?

C.8 Does your library subscribe to journals published in Africa, such as Discovery and Innovation? ___ yes ___ no

C.9 If yes, please give details. If no, what are the constraints?

C.10 Is your library charged duty or other government fees when it imports journals or other scholarly literature purchased abroad? ___ yes ___ no

- C.11 If yes, what is the rate of fees?
- C.12 Are you aware of the UNESCO protocol on duty-free importation of scholarly literature?
 yes no
- C.13 Does your library use UNESCO, British Council, the WHO Revolving Fund, or other local currency coupons to purchase journals, books, or other literature?
 yes no
- C.14 If yes, please give details, including amount obtained each year and problems encountered.

IV. PLANNING AND BUDGETS

- D.1 Do you prepare an annual budget? yes no
- D.2 How soon after you submit your budget, do you find out how much money your library will receive?
- D.3 Approximately what percent of your budget request is approved each year?
- D.4 How does the allocation come? as requested
 at beginning of the year
 mid-year
 in installments
- D.5 Is this method satisfactory? yes no
- D.6 Approximately what percentage of the library budget is used for:
 % staff salaries % book purchases % journal subscriptions
 % building improvement/maintenance % other services and supplies
- D.7 At what point in the year are you informed of your foreign currency allocation for the next year?
- D.8 Do delays in receiving information on foreign currency allocations mean a lapse in journal subscriptions? yes no
- D.9 What trends in the past five years have you observed (up and down) in your foreign currency allocation?

D.12 Have you established core lists of essential journals in the science and the humanities?
 yes no

D.13 For each core list, please give the following details:

| Discipline | Total Number of Journals | Number of Journals to which Library Subscribes | How Core List Was Created |
|------------|--------------------------|--|---------------------------|
| | | | |

D.14 Does your library subscribe to bibliographic databases on compact disc or on diskette (such as Current Contents): yes no

D.15 Please list them:

D.16 Do you think that subscriptions to these bibliographic databases will help you reduce the number of journals to which your library subscribes: yes no

D.17 Do you have sufficient funding to pay for document delivery when necessary?
 yes no

D.18 Which document delivery services do you use?

D.19 Does your library have partner libraries abroad that will help by sending needed documents free of charge: yes no

D.20 If yes, please give details, including name of library, location, and problems encountered.

V. MANAGEMENT OF THE SERIALS COLLECTION

E.1 Are journals logged in when they arrive? yes no

E.2 What is the delay between the time that journals arrive and they are shelved?

E.3 What problems, if any, have you encountered?

E.4 Are current journals kept on open shelves?
 yes no

E.5 Do library users take or mutilate journals? yes no

E.6 If so, please describe and indicate measure that the library uses to counteract theft and mutilation.

VI. EQUIPMENT

F. Photocopying Machines

F.1 Does the library have a working photocopy machine for use of readers?
 yes no

F.2 If so, how many?

F.3 Do you charge readers for photocopying on machines owned by library?
 yes no

F.4 If so, how much is the charge per page?

F.5 Do these charges, allow the library to recover all costs involved in photocopying?
 yes no

F.6 Have you contracted with a commercial service to install photocopy machines in the library? yes no

F.7 How many photocopy machines has the commercial service installed?

F.8 What does the commercial service charge per page?

G. Computers

G.1 Does your library have computers? yes no

G.2 If yes, how many?

G.2 Are your computers:

standalone
 networked

G.3 List available computer hardware. Please itemize each computer separately with the following information:

| Brand | Model | Hard Drive Capacity | Year Acquired | Acquired Locally or Abroad | How Acquired (Purchase/Grant) | Source of Grant |
|-------|-------|---------------------|---------------|----------------------------|-------------------------------|-----------------|
| | | | | | | |

G.4 If your library does not have a computer, but plans to obtain one in 1992 or 1993, please provide details on the number and type above.

G.5 What software packages does your library use?

G.6 Do any of the library staff have computer training? yes no

G.7 If yes, please give details

H. CD-ROM

H.1 Does your library have one or more CD-ROM readers? Yes No

H.2 If yes, please give details for each CD-ROM reader:

| Brand | Model | Year Acquired | How Acquired? Purchase/Grant | Source of Grant |
|-------|-------|---------------|------------------------------|-----------------|
| | | | | |

H.5 How many CD-ROM databases are you receiving this year?

| Name of Database | Publisher | Funding Source |
|------------------|-----------|----------------|
| | | |

H.6 How many staff members are responsible for CD-ROM literature searches in your library?

H.7 Have they received training? yes no

H.8 If yes, please give details of training.

VII. READER SERVICES AND UTILIZATION OF LIBRARY

I.1 Do you publicize the availability of journals you receive to your users?
 Yes No

I.2 If so, check all that apply:
 new arrivals list
 circulation of contents pages
 selective dissemination of information (SDI)
 special display
 other means (please describe)

I.3 Which of these methods do you consider the most effective?

I.4 How often did you publicize the availability of journals by the means checked above?
 1990 1991

I.5 In the past year, how frequently did you preform this service?
 monthly quarterly annually other

I.6 Do you have any difficulty carrying out this service because of:
 inoperative photocopy machines
 lack of paper
 other (please specify)

I.7 If your library provides SDI services, please give details:

Is this done: manually from a CD-ROM or other database?

For how many: students faculty researchers do you provide this service?

Do you create user profiles? yes no

Do you keep records on how many journal articles or monographs are requested as a result of this service? yes no

If so, approximately how many requests did you receive in 1990 and 1991?

Are there trends that you have identified?

I.8 Is there a national union list of serials for your country? yes no

I.9 If yes, when was it last published?

I.10 What period did it cover?

I.11 Do faculty request journal issues/articles be placed on reserve?
 yes no

I.12 If so, please describe and give examples.

I.13 Approximately what proportion of your periodical users are each of the following:

% students % faculty % researchers
 % users from outside your institution

J. CD-ROM Services

J.1 Do you publicize the availability of CD-ROM databases to students/faculty/researchers within your institution? Yes No

J.2 If so, please give details.

J.3 To whom do you offer CD-ROM services (check all that apply):

students
 faculty/researchers at your institution
 faculty/researchers at other institutions

J.4 Does the library permit readers (students, faculty, researchers) to use the CD-ROM workstation? Yes No

J.5 If so, are there any restrictions? Yes No
Please describe.

J.6 Do you keep records of how many readers request or carry out CD-ROM literature searches? Yes No

J.7 Has CD-ROM usage increased over time? Yes No

J.8 What are the trends?

| | Total No. of Searches | No. Carried Out by: | | |
|------|-----------------------|---------------------|---|--------|
| | | Students | Faculty/Researchers at Your Institution | Others |
| 1990 | | | | |
| 1991 | | | | |
| 1992 | | | | |

J.9 Do you provide a computer printout following a CD-ROM literature search?
 Yes No

J.10 When you conduct CD-ROM literature searches, can you usually locate a cited document in your library when it is requested?
 never
 almost never
 sometimes
 most of the time
 always

J.11 If the document cannot be located in your own library, what do you do?

J.12 Approximately how many times in the past year have you requested from another library a copy of an article or publication identified in a CD-ROM search? times

Comments

Attach extra page(s)

Thank you for your patience in completing this questionnaire.

