



National Agricultural Library Assessment Report

Report on the National Agricultural Library - 2001

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NOTICE: Public comments on this report received prior to September 16, 2002 will be considered in the development of specific recommendations by the National Agricultural Research, Education, Extension, and Economics Advisory Board for the future management of the National Agricultural Library.

ADDRESSES: Submit written comments to Dr. Susan McCarthy, Technical Information Specialist, USDA, ARS, National Agricultural Library, 10301 Baltimore Avenue, Beltsville, MD 20705-2351. Submit E-mail comments to comments@nal.usda.gov, or complete the comment form on this Web-site. Print copies of the Report are available for on-site review in the Reading Room of the National Agricultural Library in Beltsville, MD and at the D.C. Reference Center, Room 1052, 1400 Independence Avenue, SW, Washington, D.C. 20250-7201.

FOR FURTHER INFORMATION: Contact Dr. Susan McCarthy, Phone: 301-504-5510, or FAX: 301-504-6951, or by E-mail: smccarth@nal.usda.gov, please refer to the Federal Register Notice in the subject line.

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Executive Summary and Panel Recommendations

[USDA](#) Under Secretary Miley Gonzales and Deputy Department Secretary Rominger appointed the present Panel in October 2000 to conduct a study of the [National Agricultural Library](#) to, in words of the charge ([Appendix A](#) in full report):

"...review the activities of the National Agricultural Library in pursuit of its mandate to serve as the chief agricultural information resource of the United States and make recommendations to the Under Secretary, [Research, Education, and Economics](#) on NAL's management, staff, programs and operations."

The last full review of the National Agricultural Library (NAL) occurred in 1982 (See [Appendix B](#) in the full report, a summary of the activities that resulted from the 1982 recommendations, and [Appendix C](#), "Milestones 1982-2000 – National Agricultural Library," prepared by the National Agricultural Library). The present Panel reviewed relevant laws, NAL management and staff, other U.S. national libraries, USDA administrators, and conducted a survey of NAL's many diverse users.

The NAL was officially made a national library by Congress in 1990 in PL 101-624, in the "Food, Agriculture, Conservation and Trade Act of 1990" ([Appendix D](#)). This law ensures that the NAL serves as a National Library of the United States and as the Library of the U.S. Department of Agriculture (7 USCS 3125a 2001).

The Panel evaluated the Library's success, both as a Library of the USDA alone, and in response to its mandate to act as a national library. It was concluded that the NAL is unable, with its current level of support, to do both well. User response indicates a generally satisfactory response to NAL from USDA personnel, though there are weaknesses needing attention judging from site review of facilities, user surveys, and NAL status reports. As a national library, however, the NAL has thus far been unable to meet the expectations or the required intentions.

Recommendations of the Panel

The results of the customer surveys and the Panel's analysis make a case for the continuation and development of NAL's intended role, both as a library service for USDA personnel, and as the project centerpiece of a dynamic national agricultural information system.

As has occurred with the National Library of Medicine, this system would draw on innovative technologies

to directly link users to quality content (abstracts, full-text, data, and information packages) in all areas related to the sustainable management of natural resources in the support of the total U.S. food and fiber enterprise. Included would be a complementary mix of services including a greatly enhanced [AGRICOLA](#) database, a series of comprehensive and topical web sites, 24/7 document delivery, and all interconnected through a powerful search interface providing users with the closest approximation possible to a "one-stop-shopping" reality. Responses from NAL staff members demonstrate they understand these customer needs and have a real interest in providing the high-quality services necessary to meet those needs. What is lacking are the human and financial resources, and the explicit support of USDA, to do so.

Thus, the Panel recommends and endorses the following changes and improvements to our National Agricultural Library system:

To fulfill its Congressionally mandated mission, the NAL should move as quickly as possible to attain and maintain a leadership position in obtaining, managing and distributing new and previously unavailable agricultural knowledge using the tools of the electronic digital age to meet demands of customers located anywhere and in need of information anytime. Steps to reach this end include:

I. INNOVATIONS IN INFORMATION SERVICES

- a. Provide rapid, accurate, comprehensive access to the full range of agricultural information resources through a variety of the most cost-effective delivery systems, but with particular emphasis on ensuring leadership in applications of advanced digital technologies, and based on user-identified needs
- b. Establish a national grant program on the NLM model, to be administered by NAL, for the initiation of innovative and collaborative digital projects in agricultural information systems.
- c. Update and enhance the AGRICOLA database to a level equivalent with the NLM's Medline and PubMed services, particularly through improvements of the Web version, extent of coverage, and linkages to full-text and summaries. Related to this, complete the retrospective conversion of the NAL catalogue to digital form for inclusion in the ISIS online catalogue.
- d. Further develop the [Agriculture Network Information Center \(AgNIC\)](#) Alliance and Program as a portal to agricultural information, data, and resources, and as the foundation for a national digital library for agriculture.
- e. Continue to build the NAL Information Centers as subject gateways to key topics of particular interest to citizens, policy makers, and scientists, based on frequent user surveys and knowledge explosion.
- f. Identify and initiate cost-effective improvements and expansion of the current document delivery service.
- g. Update and implement the Technology Plan of 2002 with modifications as needed to accommodate recent and emerging advances in technology.

II. ORGANIZATIONAL STRUCTURE

- a. The NAL should change its self-concept from being a place to that of performing customer-driven functions, and its national role from being the place where every item is, into the role of being the hub through which every item can be obtained online anytime.
- b. Update and reaffirm the NAL mission and vision statements to reflect its mandate as a national library and its commitment to the use of technology to meet the information needs of the U.S. citizenry. Formulation of these statements is the responsibility of the NAL Director and the proposed Board of Regents.
- c. Provide 30 percent increases in funding each year from now until the next 5-year review when programs and services will be formally reassessed and evaluated for successful initiation of new directions. The Panel believes the annual NAL budget should eventually reach approximately \$100 million (2001 dollars) to meet its Congressionally mandated mission in the digital age. This will provide sufficient resources to develop superior expert system search tools, to hire and retain the infotech talent it needs, to fill the growing gaps in its coverage of new knowledge in research journals and historical documents, and to ensure its security in view of the new security hazards it will face. It will enable the NAL to provide services and levels of service required of a National Library in the 21st century.
- d. Increase the number of positions by 50 or more during the next 5-year review period.
- e. Realign the NAL within USDA to reflect its national mission. To reflect this mission, the NAL should report directly to the Secretary/Deputy Secretary of Agriculture.
- f. Organize a Board of Regents, on the NLM model, to direct on long-range planning, advocate for the NAL within USDA and elsewhere, guide the development of new products and services, and monitor for quality in all services. A Strategic Planning Task Force should be appointed and serve until a Board of Regents is implemented.
- g. Develop a NAL Friends Support group to assist the Board of Regents and other groups in promoting NAL programs and services.
- h. Establish the position of the Director of the NAL in the Senior Executive Service, with a four or more year term, and renewed based on performance; library degree is preferred but not required.

(The strength of interest on the panel on this issue is represented by its range of opinions, ranging from one emphasizing an exclusive political appointment to opinions that were open to either/or: political appointment or inclusion in the Senior Executive Service, to opinions advocating inclusion exclusively in the Senior Executive Services.)

- i. Authorize the NAL to solicit and accept donations, with those funds exclusively designated for use by the NAL.
- j. Establish a Development Officer to enhance liaison with private foundations and individual donors.

III. PLANNING & EVALUATION PROCESSES

- a. Introduce a formal five-year review by external reviewers, including USDA personnel, to ensure progress on long-range plans and customer service orientation, with a 100% turnover of the membership of that review group every 4-5 years.
- b. Implement a system to obtain ongoing input from all categories of customers (web, in-person, mail, telephone), and summarize the information in an annual report. These reports should include actions taken in response to customer input and should be available to the public through the NAL website.
- c. Establish internal advisory groups from USDA agencies to provide feedback to NAL about its products, services, and long-range plans.
- d. Results from the five-year reviews and all other feedback data should guide the long-range planning process. Long-range plans should be developed for a five- year period, with annual updates by the Director and the proposed Board of Regents to ensure continued viability.
- e. Complete and implement a plan for a national digital library for agriculture (NDLA) that will be the main focus and long-term organizing principle for NAL and the national network of university and industrial libraries.
- f. Establish liaisons within NAL who will act as market managers to track specified NAL customer segments for their needs and user satisfaction.
- g. Develop a plan for facilities management and improvements, including space requirements, as an integral part of the long-range planning process.

IV. LEADERSHIP

- a. Provide leadership for and become the central hub of the world's agriculture libraries to facilitate users' access and use of agricultural information on a perpetual basis using a knowledge management approach.
- b. Continue to develop the NAL role in the preservation of digital publications-and- data initiative of the USDA and in the National Digital Information Infrastructure and Preservation Program.
- c. Continue to take a leadership role in the development of national digital efforts to bring the wealth of agriculture-related information and knowledge to U.S. citizens by using the most advanced technologies and by developing the most advanced and easily used expert online search system available.
- d. Enhance contractual collaborative relationships with other governmental agencies and non-governmental units to meet the NAL's mission for collaborative collection development, preservation, and archival functions.

Larry N. Vanderhoef, Chair of the Panel
Chancellor, University of California, Davis

August 2001

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1. Interagency Panel for Assessment of the National Agricultural Library Appointed with Charge

USDA Under Secretary Miley Gonzales and Deputy Department Secretary Rominger appointed the present Panel in October 2000 to conduct a study of the National Agricultural Library to, in words of the charge:

"...review the activities of the National Agricultural Library in pursuit of its mandate to serve as the chief agricultural information resource of the United States and make recommendations to the Under Secretary, Research, Education, and Economics on NAL's management, staff, programs and operations."

The complete statement of the charge is provided in [Appendix A](#). The Secretaries appointed 13 members from various parts of the country, representing a variety of experiences in libraries or agriculture, and named as chair Larry N. Vanderhoef, Chancellor of the University of California, Davis. Two consultants were added on recommendation of the Panel Chair. Members of the Panel are listed at the conclusion to this report. The Department Secretaries requested that the Panel's work be concluded in a period not to exceed twelve months from its appointment, making the final date October 2001. We herewith provide a full report of its activity and major recommendations. The review may have special utility given the June 2001 retirement of the current director.

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2. What Progress since 1982?

The 1982 review Panel concluded its work with a list of recommendations, some of which were implemented. A summary of those recommendations and the activities and initiatives that resulted is included in [Appendix B](#). Many recommendations of the present review Panel repeat the same points raised in the 1982 review. Also noteworthy is a summary of milestones achieved, as indicated in the document "Milestones 1982-2000 – [National Agricultural Library](#)," prepared by the staff of the National Agricultural Library ([Appendix C](#)). This document provides a comprehensive list of National Agricultural Library (NAL) achievements since 1982 organized into categories: (1) legislative and administrative, (2) collection building, (3) agricultural information access, (4) bibliographic services, (5) collection development, (6) information technology, and (7) the Abraham Lincoln Building. The following discussion features some of the more significant achievements, up to the present time, taken from these two documents and from a partial list compiled by members of a Panel committee ([Appendix F](#), a report on user surveys). Finally, the Panel derived some of its conclusions from data supplied in tables attached as Appendices L-N.

2.1. Legislative and Administrative

The NAL revised its mission, values, and vision statements in 1994 as part of an ongoing strategic planning process. In parallel, it has, through brochures, tours, exhibits, videotapes, and journal articles, made concerted efforts to heighten its visibility, and to establish an Advisory Council to assist with long-range planning and policy formulation. Reorganizations and staffing adjustments were made to streamline services and to better delineate its overlapping but distinct USDA and national library functions. Finally, diverse funding options have been initiated through increases in user fees, leasing arrangements, and the use of contractors for certain activities.

2.2. Collection Building

As resources have allowed, NAL has also worked to develop its collection and resources both to fulfill its promise as a national library for the nation's entire agricultural community and as a specific resource for USDA's specific programs and agencies. This has included the acquisition of significant special collections in a variety of formats, such as materials on Agent Orange and historical USDA documents and multimedia. In addition, since the early 1980's the NAL has coordinated with the National Library of Medicine (NLM) and the Library of

Congress (LC) on collection development policies in the subject area of biotechnology, human nutrition, and veterinary medicine. The NAL also joined several national cataloging programs and became an authority for establishing and verifying the names of agricultural organizations.

2.3. International and Networking Initiatives

Another of the 1982 recommendations specified a more active role for the NAL in international information activities. This led to close involvement with the International Association of Agricultural Information Specialists (IAALD), the Consultative Group for International Agricultural Research (CGIAR), and the U.N. Food and Agriculture Organization (FAO) and its AGRIS database, on matters of coordination and cooperation. NAL also sponsored and participated in a series of U.S./Central European Agricultural Library Roundtables, and recently signed an agreement with the Biblioteca Central Magna of the Autonomous University of Nuevo Leon, Mexico, to enhance access to agricultural and related information.

Previous recommendations also focused on the need for a national agricultural information network for resource sharing, timely processing of information, and equality of access. This resulted in the NAL and representatives from land-grant university libraries forming the [United States Agricultural Information Network \(USAIN\)](#) in 1988. Through USAIN, the NAL joined with other land-grant libraries in a National Preservation Program for Agricultural Literature funded by grants from the National Endowment for the Humanities. The NAL also has cooperated with the National Association of State University and Land Grant Colleges (NASULGC) to advance support of agriculture libraries. Drawing on these collaborative efforts was the 1995 establishment of another NAL and land grant university library collaboration, the Agriculture Network Information Center ([AgNIC](#)). Although not yet fully realized, the AgNIC initiative is a discipline-specific, distributed network on the Internet envisioned ultimately as a gateway to centers of excellence in agricultural information. It currently offers 28 subject-specific sites on the World Wide Web.

2.4. Information Technology

A significant technology achievement was the National Agricultural Text Digitizing Project (NATDP) that resulted in the production of a series of widely distributed CD- ROM products for agricultural research (aquaculture, acid rain, Agent Orange, food irradiation, and the Agronomy Journal). The NAL also has been active in developing multimedia resources, and has made databases, directories, and other resources available over the Internet. In addition, the NAL has developed specialized web-based Information Centers which provide in-depth resources and reference services on such subjects as: alternative farming systems, animal welfare, food and nutrition, food safety, rural information, technology transfer, water quality.

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3. Reasons for Current Review

The last full review of the NAL took place almost twenty years ago. Therefore, the Panel evaluated the NAL's performance, not only as an agency library for USDA, but especially with respect to its 1990 statutory mandate as a national library. Based on user surveys, the panel assessed how well U.S. citizens, whether farmer, researcher or policy maker, are being provided with the agricultural information they need to make informed decisions, either through the NAL or other means. We have taken the parameter of "agriculture" to be inclusive of its numerous and sometimes largely unrecognized related fields. The importance of agriculture as it relates to the world food supply, the health of the nation's citizens, and its place in the nation's economy are hardly news to USDA, but the relationship of information to these aspects and NAL's role in providing this information to the country are unappreciated at many different levels.

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4. Methods of Panel Study

The present Panel made appropriate inquiries of relevant laws, NAL management and staff, other U.S. national libraries, USDA administrators and NAL's many diverse users through user surveys.

The sources of information the Panel examined were:

1. Statutory status of NAL.
2. User Surveys made by the Panel -- Librarians, Library Directors, scientists and other USDA personnel, on-site users, the private sector and NAL staff.
3. Presentations by NAL managerial staff.
4. Reports of library service activity, accomplishments since 1982, including budget tables.
5. Presentations by Deputy Secretary Rominger and Under Secretary Miley Gonzales.
6. Interviews with NAL managerial staff and ARS Administrator.
7. Interview with Deputy Director National Library of Medicine by Panel members.
8. Panel tour of the NAL building, Beltsville.
9. Review of the NAL Web site.

The Panel agreed on an outline of study ([Appendix D](#)) and organized ten task groups of Panel members to concentrate on each segment. Some of these groups produced individual reports, results of which are incorporated as observations or findings in various parts of this Report. Selected group reports are also presented in the Appendices.

4.1. Customer and Staff Survey Methods

Under the auspices of the U.S. Agricultural Information Network (USAIN) and in support of the Panel's program review efforts, a customer service survey was conducted in December 2000 and the first part of January 2001. This survey was an attempt to touch the pulse of the NAL's present and future customers to gain input on its current programs and services and to help in determining future directions. Five questionnaires were developed and distributed to USDA personnel through a variety of NAL customer listserv and to other related scientists affiliated with the Council of Scientific Society Presidents ([Appendix G](#)). In addition, agriculture and veterinary science librarians were sent questionnaires through their respective listserves, as were library directors at land-grant universities. Extension personnel were contacted by way of a Cooperative Extension Service (CES) Directors listserv and through a CES State Specialist listserv. Questionnaires also were distributed to NAL on-site users at both the Beltsville and D.C. locations. Finally, NAL staff members were surveyed.

The total number of returned questionnaires was 739, with an additional 53 from NAL staff members. An analysis of the general survey responses and those of the NAL staff are included in Section 5 (5.4 – 5.9) of this report.

A detailed report of the survey is attached as [Appendix F](#), including User Survey Sample Comments ([Appendix J](#)) and NAL Staff Survey Results (Appendix K - [[Graphic Version](#) - [Text Version](#)]).

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5. Findings

"NAL should be refurbished so it once again becomes the world's preeminent agricultural library. This entails subscribing to more journals, forging greater cooperation with the land-grant universities, having more service personnel to serve the nation's science community, and making greater amounts of holdings and assets (databases) more friendly to remote access. It appears to be under-funded..."

-- Survey respondent, 2001

5.1. NAL: A National Library by Law

The [NAL](#), officially made a national library by Congress in 1990 in PL 101-624, in the "Food, Agriculture, Conservation and Trade Act of 1990" ([Appendix E](#)), is to serve as a National Library of the United States and as the Library of the U.S. Department of Agriculture (7 USCS 3125a 2001). Thus, the Library has a legal mandate of mission, management policies, administrative accountability, budgetary requirement, and user satisfaction, all of which contribute to what one may judge as a successful operation or not.

The Panel, therefore, spent considerable time in debating the current role and future direction of the NAL, not the law which is clear on this matter, but whether evidence over the years since the 1982 review would indicate that the Library is succeeding in its first mandate to be a national library and whether it is also successful as a Library of the USDA alone. The Panel is convinced that the NAL has been and is insufficiently supported to achieve its legal mandate. User response indicates a more satisfactory response to the NAL from USDA personnel. There are, though, clearly defined and growing weaknesses identified through user surveys, NAL status reports and Panel site review of facilities. Whether or not the Library "provides leadership in information management" for the rest of the country is, charitably assessed, in serious doubt. Reasons go partly to funding that is inadequate for its diverse mandated responsibilities, and to the lack of advocacy groups and actions internal and external to the USDA. Either management has been ineffective in communicating the Library's needs to administrative and funding agencies, or, if well communicated, have not been recognized with realistic appropriations. The records show that NAL management proposed and justified annual budgets over 50 percent larger than actually received. The Panel regretfully concludes that budgets actually received were insufficient to achieve the legal mandate.

5.2. Disparity in National Libraries

The Panel discussed the parallel situation, in time and mandate, existing between the NLM and the NAL: Both started as special services to a particular agency in government, but were later declared federally funded national libraries: the NLM in 1956, and NAL in 1962 and again in 1990. Both, with histories into the nineteenth century, are required to specialize as life sciences libraries with major commitments to human medicine and agriculture, respectively, both are committed to serving national interests and clientele; both are programmed to be leaders in information technology for their specializations; and both had similar budgets in 1975-1978.

In 2001 the NLM is an unquestioned world leader in medical information, the hub of a structured regional library network, and a producer of internationally recognized databases (Medline, PubMed, Entrez, for example), which are fundamental to science, even with extant competitors from the private sector (such as Excerpta Medica and specialized genomic databases).

The same cannot be said for the NAL leadership. While the NAL has worked to build the [AGRICOLA](#) database as a resource for agriculture, it has not been able to capitalize on its potential, or to utilize technological advances to develop the enhanced capabilities desired by its users. Rather, the NAL has chosen to initiate a number of pilot projects, virtually all of them with inadequate support, and, consequently, with limited achievement of the anticipated effect. The NAL collection and staff are in a decline in numbers, yet the Library is, unrealistically, expected to have the same or better reliability as a national resource.

What went wrong? Given the generally lukewarm reception to Library needs by agency budgeteers and legislative appropriators, why was the NLM, but not the NAL, able to successfully pursue its mandated mission?

Perhaps of greatest influence and impact, the NLM utilizes a very effective Board of Regents. That Board has helped to develop NLM's service horizon, providing rigorous long-range planning advice to the Director of the National Institutes of Health. Past reviewing panels of the NAL all recommended a similar Board of Regents for the NAL to advise the Secretary of Agriculture on Library matters in a capacity analogous to the NLM Board of Regents. These recommendations were not enacted for the NAL, either in Congress (1990) or in Agency review (1995). This Panel once again addresses the need for a Board of Regents later in this report. As the complexity of the digital information age grows exponentially, it takes a very short time to drop from a world leadership position to one of becoming obsolete.

The library operations budget for the NLM (\$240M) ([Appendix H](#)) is now about twelve times the size of NAL's current library operations budget (\$20M) ([Appendix I](#)). During the past decade, NLM's budget has increased significantly each year; NAL's has remained flat ([Appendix R](#), [Appendix S](#), [Appendix T](#), [Appendix U](#)). This budget disparity easily accounts for the dramatic disparity in products and services these libraries are able to provide.

Through natural evolution of needs and purpose, the National Institutes of Health (NIH) now also supports the NIH Library in Bethesda, in support of the NIH hospital personnel, while the NLM provides services to the entire national biomedical community. The NAL, by comparison, remains charged to do both: departmental and national service, serving other libraries and individuals nationally as well as serving more than 90,000 USDA employees as a departmental library unit. Both the NLM and the NAL cooperate with other library systems outside the U.S. to provide training for information scientists and to assist in locating information about U.S. agriculture or medical practices, although the NAL has had to reduce this involvement for budgetary reasons. Library services budgets for NLM Div. LO/NIH Library and the NAL are compared in [Appendix V](#).

5.3. Comparison to ARL Library Budgets

It is nothing less than startling to compare NAL's operations budget to that of a typical Association of Research Libraries (ARL) library in the U.S. Comparable figures for 1998 give the average ARL library operations budget at \$15,440,758; the NAL's budget was \$19,208,000. This is especially striking since ARL libraries typically serve a localized academic community, while NAL is expected to serve the entire country and, as well, produce an easily accessible database reflecting all of the major U.S. interests in agriculture.

To say the least, the level of support does not match the requirements of the Library's national mandate. For FY 1992-2000 the net number of paid subscriptions at NAL decreased from 7,108 to 5,123. Based on this history, NAL projects a decrease of 300 subscription titles per year if there are no increases in materials budget. The decline affects the value of the collection and the reliability of the indexing of U.S. agriculture that NAL attempts to be doing for AGRICOLA.

5.4. Summary of NAL Customer Survey Results

Questions in the survey were open-ended, giving respondents the opportunity to describe information-gathering activities in their own words. Answers were reviewed to identify similar elements that could be categorized and quantified for analysis.

Overall, the general survey, largely of USDA employees and nationally distributed scientists, reveals a strong need for new information and a widespread use of electronic services for finding information. In response to the question of where information is most often obtained, 28 percent identified the World Wide Web, 25 percent noted either NAL or AGRICOLA, and another 23 percent specified university, agency, or other libraries.

Some users may have gone to the web or other libraries to search AGRICOLA or to use other NAL online services, while others indicated that they had to go elsewhere because of the gaps now evident in AGRICOLA and the failure of NAL to serve their needs. In any case, the most used NAL service was identified by 26 percent as AGRICOLA, closely followed at 24 percent by document delivery; whereas, the most critical service was considered to be document delivery at 25 percent, and AGRICOLA at 14 percent. However, if all electronic-related access points were combined with the AGRICOLA percentage (such as NAL web sites, AgNIC, and CALS) the overall number for electronic access would be greater than any other service, including document delivery. That is, while AGRICOLA is the most used and visible electronic service, on a regular basis customers do use other NAL services, from document delivery to the various NAL web sites. This suggests a need to continue to develop and maintain a variety of delivery systems and customer services if NAL is to meet the full range of its users' information needs.

Looking into the future, the survey asked for a description of the types of information services they would like to have in 2010. In this the respondents were in the most agreement: nearly 75 percent responded with examples of electronic services such as online journals and journal articles, and specialized and linked databases with expanded search capabilities. Others mentioned faster services in general, followed by those who wanted to see broader and deeper development of collections.

Others mentioned faster services in general, followed by those who wanted to see broader and deeper development of collections and interlinking of articles.

Similar response results were given to the question about what new or improved NAL service would be desirable. Greater electronic access to information and resources, particularly online journals and improved databases, was listed by 65 percent of the respondents, with another 16 percent requesting broad collection development activities. Responses to the question about what other library or library system is useful to them provides insights into potential models for future developments. The National Library of Medicine, and particularly PubMed and Medline, was most often mentioned by respondents as the system to emulate. The following quotes illustrate user interests (see also [Appendix J](#), User Survey Sample Comments):

Visions of the future: "A fully integrated linkage to every major university library system worldwide so that resources can be downloaded or sent electronically to where they are needed".... "a perfect information gathering world would be... to find relevant citations on any topic by searching in one mega-database"... "upgrade AGRICOLA... [with]...abstracts for more entries, sources of documents clearly indicated, and back it up with a service that leads the users more reliably to the "indexed information"... "impeccable indexing and online links to government publications – what more could we ask?" and "finally a prophetic statement for the AgNIC system."

"If NAL wants to provide national agricultural information services by 2010, certainly they need to go to 'the people' to find out what information they are seeking. Then NAL must create or compile content, not just indexing... I find our users, faculty and students...[and]... the general public, increasingly less willing to wade through pieces of the puzzle. They want 'packages:' mosquito eradication in wetlands or farm ponds... can NAL become a provider of information packages related to agriculture instead of 'just' indexing? Can it become a gateway to information being churned out by its own as well as other agencies?"

5.5. Summary of NAL Staff Survey

The 53 NAL staff members who responded to the survey were employed in public service, information systems development, or library administration. Not surprisingly, a majority of the respondents considered a knowledgeable and dedicated staff as a major strength of NAL. This was followed by a nearly even split between collections and electronic access points, such as AGRICOLA. Weaknesses were largely grouped around management issues, budget problems, and outdated databases. Critical services were identified as reference services, access to electronic services (web AGRICOLA, AgNIC, and NAL's web site), and document delivery. Suggestions for improvements included a variety of electronic services beginning with both content and web accessibility enhancements of AGRICOLA, and followed by various types of web site development.

The greatest barrier was seen as budget deficiencies, followed by staff shortages and a lack of strong leadership. Of particular importance here are staff responses in the area of service development as they correspond closely with those outlined by respondents to the survey, suggesting a shared vision for future services.

Additional comments by NAL staff are in the Staff Survey Results Report in Appendix K- [[Graphic Version](#) - [Text Version](#)]).

5.6. Summary of Library Directors Survey Response

Library directors also mirrored many of the responses made by general NAL users and NAL staff members. They saw the strengths of NAL as primarily its collections, including historical archiving, but also noted online services, including AGRICOLA and AgNIC. The main weakness was seen as the lack of adequate funding for its key functions, a similar lack of visibility, poor placement in USDA, and a location outside the power corridor.

All of the library directors were familiar with or had used the AGRICOLA database. In addition, the NAL web site was widely known, as was the document delivery service, NAL's historical collections, AgNIC, and the online reference service. Similarly, the most important NAL service was identified as either AGRICOLA specifically or other databases that provide access to all-important agricultural information. This was followed by those who identified preservation activities and access to hard-to-get materials, and those who listed document delivery as the most important service.

The majority of library directors who responded to the question asking for suggestions for new and improved services, focused on greater digital access to information, full- text, document delivery, and AGRICOLA links. Also, similar to many of the customers surveyed, there was an interest in expanding the subjects covered by the NAL since newly created areas of knowledge are becoming of increasing importance to participants in agriculture. This line of thinking was consistent in the responses to the question on how information services were envisioned for the year 2010. Many offered ideas for providing digital access to all types of information, particularly full- text materials. Included were suggestions to greatly expand and upgrade AGRICOLA and AgNIC. Other suggestions were to build the NAL's coverage in related fields such as the environment, to improve visibility, and to expand reference services. One revealing quote outlined "a perfect information gathering world from the client's perspective: 1) to find relevant citations on any topic by searching in one mega database; 2) the citation/abstract links directly to the article or book cited; and 3) if the book or article has interesting references or footnotes, they link directly to the items cited."

5.7. Summary of USAIN AGRICOLA Survey

The U.S. Agricultural Information Network (USAIN) AGRICOLA Interest Group conducted a survey of AGRICOLA users in February 1999. Most survey respondents rated AGRICOLA generally a very good to excellent to database.

Based on the feedback received, the Interest Group suggested NAL provides an extremely important function by producing AGRICOLA, and wanted to see an even greater commitment of staff and resources to it.

Areas identified for emphasis in the survey and through AGRICOLA Interest Group discussions were to: (1) include abstracts in as many records as possible; (2) include indexing for as many book chapters as possible; (3) index all USDA publications including regional publications which are sometimes missed; (4) facilitate the inclusion of state experiment station and extension publications; (5) give special consideration to the importance of timeliness in indexing all materials; and, (6) improve the interface and searching capabilities of the free internet version of AGRICOLA.

5.8. Analysis of NAL Strengths and Weaknesses as Identified by Survey Respondents and Panel Members

The responses to the customer service survey questions regarding NAL strengths and weaknesses were similar to the impressions gained by Panel members throughout this review process (See also [Appendix F](#)).

Major areas of strength include extensive and unique collections, the AGRICOLA database, and dedicated staff members. Specifically, NAL has the largest collection of agricultural information in the world, numbering more than 4 million items and including 20,000 journal titles. The AGRICOLA database now includes more than 4 million records and is available free-of-charge via the World Wide Web.

The NAL staff members actively participate in national preservation activities for both print and digital resources, and have taken the leadership in developing specialized information services such as the various web-based information centers, and the collaborative AgNIC initiative. In 2000 a technology plan was developed to enhance information technology and information management directions ([Appendix X](#)). Staff members are currently developing a plan for using state-of-the-art technologies to provide users with what they want when they want it.

However, there also were similarities in responses identifying perceived weaknesses. AGRICOLA was at the top of both lists due to problems with timeliness, difficulties with the web interface, lack of abstracts, and a need for broader content coverage. According to both Panel members and users, the NAL has not kept up with new information technologies or with new directions in scientific research, in terms of both collection development and electronic access to such information. Further, due to budget stringencies, AGRICOLA has developed serious gaps in its internal continuity, frustrating frequent users of this database. A lack of awareness of NAL services and a need for greater publicity in general were mentioned by current NAL customers, while Panel members also saw a need for greater overall visibility and for more effective collaborations within the research library community.

Whereas both the NAL users and Panel members agree that the NAL offers valuable services, Panel members identified more organizational weaknesses (lack of funds, advocacy groups, and collaborative arrangements), while users understandably focused on weaknesses in products and services (limitations of web accessibility and content, decreasing journal subscriptions, and collection gaps in rapidly growing fields, such as biotechnology).

Panel members also noted the cancellations of hundreds of journal titles, and the staff cutbacks, in spite of

increasing demands for greatly expanded services, particularly in the area of electronic access. The lack of funding for new initiatives, and the general lack of external advocacy, vibrant partnerships, or a visionary plan to guide the organization into the frontier of knowledge management, appear to have frustrated staff. Although the NAL has accomplished much since 1982, user needs have increased exponentially and concurrently with revolutionary improvements in technology; there is a growing gap between what is possible and user groups' expectancy and the state of NAL programs and services.

5.9. Private Sector Users

A quick survey of NAL use by 107 agribusiness mid-managers (45 percent response) gave a snapshot of NAL utility in the private sector. From among nine possible answers, no one chose "I use the NAL regularly, at least once a week," one in ten never heard of the NAL, 19 percent never use the NAL, 29 percent use the NAL less than once a month, and 27 percent do not use the NAL, but know that people who work with them use the NAL occasionally.

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6. Discussion Related to Recommendations

6.1. Organizational Structure

6.1.1. Mission Statement

The Panel examined the [NAL's](#) mission and vision statements and has made recommendations that reinforce NAL's role in information technology and as the hub for coordinating agriculture information efforts for the nation. Specifically, it is recommended that the Library must adopt as its mission something considerably more concise and precise than those statements put forward in 1982 and 1993. The mission statement must communicate an explicit and bold purpose that will achieve its mandate as a national library.

Such a mission statement must devolve finally to this intent: To fulfill its Congressional mandate, the NAL ensures that whenever and by whatever means it is measured, the Library will demonstrate rapidly evolving and effective processes for quickly gathering and distributing agricultural knowledge.

6.1.2. Vision Statement

Concomitant with a new mission statement is the need for a sweeping vision of the future. We know from recent experience that we cannot imagine what technology will make possible by the year 2020, but every organization and business must prepare itself for this future by building a firm foundation for growth and development. It is imperative for the NAL to be guided by a grand and forward-thinking view of its own destiny. With adequate support, NAL could indeed become the impressive entity envisioned by one Panel member:

In 2020, "NAL is a recognized leader in agricultural knowledge management for the past 15 years. It has achieved this status by leading in every important relevant development and in taking prudent, entrepreneurial risks at every opportunity. Its unique, continuously evolving expert system has been adopted by and licensed to every national library and most universities in the U.S. and abroad. It now serves as the hub of major 2-way information networks, including 50 million web sites, 3,000 university libraries, 10,000 company libraries, 150,000 scientific research labs, every farm in the U.S., and 50 state consumer networks. It is a fully integrated product of the digital age, with full, same hour voice access (in the 15 most widely used languages) to any new agricultural knowledge, provided in any form or format, and delivered 24/7 in minutes to its always delighted 100 major customer segments."

6.1.3. Budget Support

This vision of the NAL as a "recognized leader in agricultural knowledge management" is not any different than is expected in the Library's mandate. The conclusions of the Panel, that there has never been sufficient support to meet that mandate, is supported by an almost identical mandate for the NLM many years ago, in this case though, a mandate that was adequately financed. The NLM has been successful, while the NAL has fallen far short. To realize the potential of the NAL vision and meet the growing demands for agricultural knowledge in the information age, management must recommend and the Department must implement budgets appropriate to NAL's mandate. Since 1982, there have been revolutionary developments in information storage devices, including networked systems, the rise of the internet and text digitization. Changes in the Library's budget have not been parallel to what might be expected to maintain currency in this dynamic situation. In spite of the slight improvements in the Library's budget in the past few years through positive support from the Department's administration, Congressional appropriations for NAL still remain relatively flat. A ten-year table of NAL budget requests is included as National Agricultural Library Budget Requests 1990-2001 ([Appendix R](#)).

6.1.4. Organizational Placement of NAL within [USDA](#)

The Panel recommends that the Secretary of Agriculture realign the organizational position of the National Agricultural Library so that the Director reports directly to the Office of the Secretary of Agriculture. The rationale for this change is quite overwhelming. The NAL has a national and department-wide function. Organizationally, it should be at the same level as other agencies and offices with national mandates and department-wide functions, reporting to Cabinet level officials. The NAL's status and leadership as a national library is best served by having the needs of the non-USDA, as well as those of USDA clients, brought directly to the attention of the Secretary of Agriculture by the Director of the NAL.

The Panel considered the organization placement of the other national libraries. The Director of NLM reports to the Director of The National Institutes of Health. The Director's position is in the Senior Executive Service, and is not a term appointment. As such, the incumbent is not asked to resign during changes of administration, as are political appointees. However, the Director can be reassigned, like other Senior Executive Service members. Because of the mission of the NIH, the Director of the NLM always holds a M.D. degree, not a library degree. Similarly, since computer science or knowledge management expertise has become essential to NAL, any relevant advanced degree but not necessarily the library degree should be the basic credential for the Director of

the NAL, and based on the successful model its Director should be in the Senior Executive Service.

6.1.5. Board of Regents

The NAL requires an external advisory group of professional research and information scientists and representatives of agriculture segments to help plan and prioritize long term planning for its programs, services, and policies. In the words of the proposed legislative text in 1990, a Board of Regents is necessary "for the purpose of advising, consulting with and making recommendations to the Secretary of Agriculture on matters of policy in regard to the Library." This Panel strongly advocates prompt implementation and legislative support for a Board of Regents group, again using the National Library of Medicine and its Board of Regents as a model for operation.

Progress made by the NLM over its history is impressive, owing in large part to the counsel of its involved Board of Regents; the Panel recommends long-range planning cycles for the NAL to emulate the planning activity of the NLM Board. Such a Board was proposed for the NAL in Congressional action in 1990 and 1995, but failed to be enacted.

6.1.6. Director (See also 6.1.4.)

Given the current situation, the recruitment of a strong and dynamic Director will be essential to the revitalization of NAL. In the words of the current Director,

"Leading NAL into its future is a challenging job, one that demands vision, drive, commitment to customers and passion for this national treasure. Successful leadership looks to the future from the solid foundation of past achievement. Attracting the best to lead NAL... is itself a challenge."

Properly positioned in the administration, advised on planning and visioning by a Board of Regents (6.1.5.) and with a Friends Group for support in Congress (6.1.7.), the new director will, as well, have to study NAL staff organization for appropriate mechanisms to ensure open communication at all levels and to respond to staff contributions for visionary library planning and governance.

6.1.7. Friends Group

The NAL currently lacks a strong constituency to advocate for resources and support. At one time, the NAL had a "Friends" group that provided support through fostering special public relations programs and other outreach activities. Such "friends" groups typically grow out of and are organized by library users, but they do not develop and flourish without direction and encouragement from the library. The NAL's role must be to encourage development of such a group and to provide it with a clear understanding of its purpose, namely to provide an

important means of communicating NAL's mission and vision to elements outside the Library, especially including those who influence financial support for the Library.

6.1.8. Development/Gifts

Although the NAL has the authority to accept gifts, it must, as well, have the authority to solicit financial and non-financial gifts and donations and allocate the resources received without prejudice to its other federal support. This authority is pivotal for the acquisition of historically significant materials, as well as the funds to support their preservation.

6.2. Planning Process

6.2.1. 5-Year Reviews

So as to provide the Secretary with an ongoing assessment of NAL performance, a complete external review of NAL programs and services should be undertaken every five years. The Department might consider contracting with NCLIS, or a similar organization, to periodically conduct these reviews, and include performance measures of importance to the proposed NAL Board of Regents.

6.2.2. User Surveys

The NAL must methodically and periodically assess, analyze and adapt to changing customer needs. Under the auspices of the proposed Board of Regents, regular surveys of customers, prospective customers, and other stakeholders are needed to appropriately reallocate resources and/or optimize services. [USAIN](#), the Friends of the NAL, the Board of Regents, the Council of Scientific Society Presidents, a substantial and credible market analysis company in the private sector, or some other appropriate outside group could be a source and supporter for such ongoing research, since it might otherwise be encumbered if attempted by traditional federal channels.

6.2.3. Internal Advisory Groups

In its role of internal service to the USDA, the NAL should develop liaison groups within the various agencies to gain additional input for planning purposes. Two-way communication with the NAL, wherein the NAL would provide the groups with an orientation to products and services, and the groups would provide evaluative feedback. The input would be made part of the NAL's annual documentation on operations and impacts.

6.2.4. Long-Range Plans

Building on the strong statement made by the NAL in their annual strategic and operating plans, and as mentioned in section 6.2.1. ([Appendix O](#), [Appendix P](#), [Appendix Q](#)) the Panel recommends long-range planning

cycles for the NAL, such as those undertaken by NLM for their Board of Directors. These NLM cycles occur every five years and include stated goals and objectives, a track record of achievements, and a visioning document. Long-range plans will guide the Library in resource allocation and program direction, but should also be flexible enough to allow for mid-course corrections as events and technological developments take place. Again, the Panel makes reference to the NLM planning process as an example ([Appendix W](#), NLM Long-Range Planning Process).

The NAL's operations plans for the last three years and strategic plans for the last five are attached as Appendices:

NAL Strategic Plan FY 1996-2001 Annual Operating Plan FY 1999 ([Appendix O](#))

NAL Strategic Plan FY 1996-2001 Annual Operating Plan FY 1999 ([Appendix P](#))

NAL Strategic Plan FY 1996-2001 Annual Operating Plan FY 1999 ([Appendix Q](#))

6.2.5. National Digital Library Planning

NAL short-range plans should incorporate an action plan for becoming a highly effective national digital library for agriculture and its related fields, involving not only a significant technological orientation, but also the types of collaborations and long-range planning that would be necessary to build and ensure the perpetual currency of such a system. Included would be an assessment of how NAL might coordinate its own products and services towards achieving this end, and also a blueprint for how it might work with partners to maximize efficiency and inputs.

6.2.6. Market Adaptation

The NAL planning must, beyond all else, address and satisfy a wider spectrum of customers' changing needs for information, analyses, and knowledge management, even if it is done at the expense of data collection and retrieval/broadcasting. The future needs of customer groups must be assessed, along with an appreciation of potential alternatives to satisfy those needs to determine where the NAL niches may be developed or strengthened. For each customer segment (i.e. ARS, FDA, educational institutions, farmers, etc.), the questions that need to be answered are: (1) What type of services do they need now? (2) What will they need in the future? (3) What alternative sources may serve these needs? (4) What are NAL's strengths in this niche, both present and possible in the future? and (5) When should NAL act to ensure the widest public access to information that is widely needed?

The Panel task group assigned to studying long range planning developed more details, including suggested templates for tracking market segments, attached as [Appendix Y](#), with options that NAL might consider as alternatives for planning mid- course corrections.

6.2.7. Facility and Space Issues

The Library offers the following assessment on the capacity for shelving in the Lincoln building:

"Two current projects will ease this situation enough so the collection will be able to 'fit' in the Lincoln Building for the next 10-15 years.... There are additional projects that would enhance our storage organization and capabilities, however, they require funding that has not been available."

The worst floors are 6 and 7 because this is where most of the currently received journals are shelved. In many areas of those floors materials are shelved on "overflow shelving," more commonly known as book trucks. Several years of the older volumes are pulled off the shelves in order to shelve the currently received issues. This process is followed throughout the year and then in the summer, if funds are available, mini- shifts are conducted to free up enough space to reshelve the overflow materials as well as to make room for the next year's anticipated volumes.

"Two current projects will ease this situation enough so the collection will be able to 'fit' in the Lincoln Building for the next 10-15 years. The first is the renovation of the 5th floor. This project will re-locate approximately two-thirds of a floor of Special Collections materials to the 5th floor, freeing up space for General Collections. In addition, for the last two years the NAL staff have conducted an extensive weeding program to remove excessive duplicate copies of materials from the General Collection. A survey was also conducted to identify for acquisition microform versions of print newspapers currently in the NAL collection. As the microform versions are received the paper copies will be discarded; this will eliminate fragile and deteriorating newsprint from the collection thereby freeing additional shelf space for collection items. There are additional projects that would enhance our storage organization and capabilities, however, they require funding that has not been available." NAL investigated options for off-site storage in the early '90's, but no decisions were made. Budget guidance from the Department indicated that additional funds would be unlikely to support either building additional capacity in Beltsville for NAL or procuring off-site storage.

All binding activities were suspended in FY 2000 due to lack of funding and have not resumed. Throughout the 1980's and early 1990's, binding was routinely suspended due to lack of funds. Binding all current loose issues would cost approximately \$1 million. This figure was based on estimates obtained in planning for the major collection shift that will accompany the 5th floor renovation project. The Panel observes, simply, that the suspension of binding jeopardizes conservation efforts and affects availability of shelf space.

6.3. Leadership Issues/Opportunities

The NAL has an important role as the national Library of the U.S. for Agriculture and as a Library for the U.S. Department of Agriculture. It is intended to be a leader in the field of agriculture information. To do so, the NAL must focus on its expressed vision that "agriculture information will be more accessible to more people through technology," and that "the NAL will lead in the information revolution by forging partnerships and exploring new methods and technologies that advance open and democratic access to information."

The Panel applauds the above vision set out by the NAL in its Vision Statement but sees the NAL as struggling in its fulfillment due to resource restrictions and competing expectations.

6.3.1. Challenges, Future Threats

Strategic choices: Leadership in the field of agricultural information requires difficult strategic choices. What resources will be allocated to the NAL? To online services versus physical texts? Toward preserving historical treasures versus advancing new knowledge? The Panel believes that priority should be given to both online service and advancing new knowledge when resource allocation decisions are made.

Resources: The NAL cannot, in its current circumstance, be a leader. The Library management system (software) is old; facilities or equipment are in need of repair; services have not kept pace. Federal budgets for agency programs and services (non- entitlement) have been restricted for several years and seem destined to continue to be restricted.

Staff: The staff is a current strength of NAL, but the recruitment and retention of top- flight staff with budgets shrinking in real dollar terms will be an increasing challenge.

Visibility: The NAL is likely providing valuable services that are largely invisible to key decision-makers who affect NAL.

6.3.2. Opportunity: Knowledge Management and Digital Library Initiatives

NAL's mandated leadership role means focusing on a knowledge management approach to facilitate the value, growth, and use of new agricultural knowledge. This leadership direction might be best served by turning the NAL basic paradigm from the biggest and best collection of knowledge into the most rapidly evolving and effective processes for gathering and distributing agricultural knowledge. In this capacity, NAL should participate in efforts to create new and more effective digital library systems for bringing agricultural knowledge to customers, not only through indexing and abstracting services, but as information packages to facilitate learning and decision- making.

6.3.3. Opportunity: Preservation Initiatives

Research findings, policy statements, consumer guidelines and other important information resources are increasingly published in electronic formats. These formats provide powerful advantages for customers in searching, delivery, and reuse of the content. However, these formats are inherently more ephemeral than paper print format. The content is therefore vulnerable to loss. The Office of the Chief Information Officer is leading a Departmental Initiative to develop policy and guidelines for the Department governing the long-term preservation of digital publications. The NAL must continue to take a lead in this initiative and should be given support for its successful conclusion.

The NAL should also provide strong support to the National Digital Information Infrastructure and Preservation Program, which is a Library of Congress-led program. This initiative will set national digital preservation standards. It gives the NAL an opportunity to serve the agricultural community through sponsorship of vital projects, objectives, and shared policy-making. In addition, the NAL should continue to pursue, and should be supported in its effort to gain, Affiliated Archive Status with the National Archives and Records Administration.

6.3.4. Opportunity: Collaborative Relationships

The NAL has a definite and defined set of natural constituents and collaborators/partners in this country's agricultural (especially land grant university) libraries and it is well known among these constituent groups for the range of resources and services it offers. Capitalizing on this advantage, NAL should play an aggressive leadership role for this group. One example: develop a realistic, holistic preservation strategy for the nation's agriculture literature, including state agricultural documents, extension documents, and the like, in all original formats.

6.4. Innovations in Information Services

6.4.1. Technology Issues

The advent of the internet has created a challenge for all libraries. A rapidly growing user base, now a clear majority, prefers online searching as a methodology for both speed and comprehensiveness. Libraries have played a historically significant role as places where information resources are stored and accessed. The Internet has changed and will continue to change the way research is conducted and the ways needs for knowledge are, and can be, fulfilled. Leadership in the Internet field will require new perspectives, ongoing new ideas and understandings, and a significant commitment of financial and human resources.

NAL developed a comprehensive plan for technology innovation, which was issued as the NAL Technology Plan 2000 ([Appendix X](#)). The Panel endorses the plan as one of its Panel recommendations.

The Technology Plan as formulated by the Information Systems Division (ISD) in October 2000 should be revisited and modified when the additional human and financial resources specified in this report are made available to the NAL. The ISD should outline the positions and infrastructure requirements necessary to support an upgraded integrated library system and to accommodate improvements and efficiency in all computer systems, particularly those supporting AGRICOLA, document delivery, and the various web sites. Only with a solid foundation of information technology and information management, will the NAL be able to realize its vision for leading "in the information revolution by forging partnerships and exploring new methods and technologies that advance open and democratic access to information."

6.4.2. Innovative Technologies Grant Program

NAL should initiate a grants program for encouraging and promoting a national technical infrastructure for agricultural information and networking. This program would be similar to NLM's extramural grant programs that are offered in a number of categories including Resources for Information Management and Research and Research Resources. These grants are authorized by the Medical Library Assistance Act and are given in areas such as: information access, information systems, Internet connections, integrated advanced information management systems, informatics, and digital libraries applications. Grants-in-aid are given to the extramural community, sometimes as contracts, in support of the goals of the NLM and as seed money to initiate a resource, service, or program. They provide an opportunity to develop the linkages between the NLM and its regional libraries and, at the same time, to greatly expand all of their capabilities through innovative projects.

Because this is a successful model, the Panel strongly endorses a grants program for the NAL as a mechanism for

building on and formalizing the NAL's ties to the now loosely knit network of developers of new innovations and the agricultural libraries within the land-grant system, including the full-range of USAIN institutions. NAL should help develop collaborations for the advancement of information technologies to disseminate agricultural information and knowledge.

6.4.3. AGRICOLA

AGRICOLA, the primary index to U.S. scientific literature for agriculture and allied fields, has served as a leading solution for agriculture researchers for many years.

However, more recently AGRICOLA is not delivering up to expectation in some users' eyes because shrinking budgets have created gaps that compromise its value.

To correct this situation, NAL management should conduct, preferably on advice of the proposed Board of Regents, a timely review of AGRICOLA to align its content with its significance to the nation's agricultural information needs. This will include action plans and estimated costs for upgrade of content, and the addition of online linkages to full text wherever possible with priorities defined by the user communities to USDA and state agricultural extension publications. Until a Board of Regents is implemented, the Panel recommends that the Library appoint an expert Strategic Planning Task Force for direction and budget recommendations.

6.4.4. [Agriculture Network Information Center \(AgNIC\)](#)

The Library has participated collaboratively with many research libraries on various information projects over the years since the last review. These projects are largely, but not entirely, successful by virtue of altruism on the part of participating individuals and libraries. For example, the NAL provided seed money for establishment of the Agriculture Network Information Center (AGNIC), but the network is maintained through volunteer efforts of participating institutions and individuals. This distributed network, which could be the foundation for a national digital library, already has achieved a certain level of success in bringing agricultural information to the public from a broad base of institutions and experts. In the future, it could provide customers with much more wide-ranging knowledge-based learning resources and with information and data that has previously been unavailable. However, to achieve this potential, the Network requires extensive technical expertise and infrastructure, as well as broader topical orientations. The NAL should be provided with the basic human and technical resources to create the necessary backbone for AgNIC's system requirements and for general content development. Enhancements and special applications, such as interactive learning modules, and those using remote sensing and geographic information systems, could be funded through the proposed information technologies grant program, and NAL should provide a regularly updated, user- friendly, online learning module to teach new users how to use and gain most benefit from NAL.

6.4.5. Information Centers

Increasingly, customers want more than bibliographic references and annotations; they want packages of information that directly answer questions they might have and that are available on a 24/7 basis. Similar to AgNIC, NAL's Information Centers are an excellent beginning for providing this kind of value-added service. However, the topics covered in both AgNIC and the Information Centers need to be expanded to cover the full breadth of agricultural information interests. An example is the NLM's development of the MEDLINEplus, a web-based health information resource for the general public. This service, which started out covering 22 topics, now provides full-text documents, pre-formulated MEDLINE searches, and links to high-quality related web sites on 225 health matters of particular interest to U.S. citizens. The AgNIC alliance web sites and the NAL Information Centers could form the basis for a similar service for agriculture. Consideration in the long-range planning process should focus on how to structure these services into a more cohesive and identifiable service with a single user interface to facilitate a "one-stop shopping" concept.

6.4.6. [Document Delivery](#)

Document delivery in paper and electronic form are important NAL services. The NAL responds to 150,000 requests annually for documents in its collection, to USDA employees and other public and private sector parties. High quality digitization, electronic transmission, intellectual property-right considerations, and questions of permanent archiving complicate the planning and budgeting for the future. It is clear that most users in the survey anticipate a growing reliance on electronic transmission of text as the preferred access route. The NAL will need to develop more timely and extensive electronic document delivery systems to meet future customer needs.

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7. Recommendations of the Panel

The results of the customer surveys and the Panel's analysis make a strong case for the continuation of [NAL](#) not only as a library service for [USDA](#) personnel, but as the centerpiece of a dynamic national agricultural information system as a national library that also serves as a library service for USDA personnel. This system would draw on innovative technologies to directly link users to the most useful and appropriate quality content (abstracts, full-text, data, and information packages) in all areas related to the sustainable management of natural resources in the support of agricultural production. Included would be a complementary mix of services including a greatly enhanced [AGRICOLA](#) database, a series of comprehensive and topical web sites, 24/7 document delivery, and all interconnected through a powerful search interface providing users with the closest approximation possible to a "one-stop-shopping" reality. Responses from NAL staff members demonstrate they understand these customer needs and have the same interest in providing the high-quality services necessary to meet those needs. What are lacking are the human and other necessary commitments by USDA, to do so.

Fulfilling its Congressionally mandated mission, the NAL should move as quickly as possible to attain and maintain leadership position in obtaining, managing and distributing new and previously available agricultural knowledge and exploiting the tools of the electronic digital age to meet demands of customers located anywhere and in need of information anytime.

Thus, the Panel strongly recommends and unanimously endorses the following changes and improvements to our National Agricultural Library system:

I. Innovations in Information Services

- a. Provide rapid, accurate, comprehensive access to the full range of agricultural information resources through a variety of the most cost-effective delivery systems, but with particular emphasis on ensuring leadership in applications of advanced digital technologies, and based on user-identified needs.
- b. Establish a national grant program on the NLM model, to be administered by NAL, for the initiation of innovative and collaborative digital projects in agricultural information systems.
- c. Update and enhance the AGRICOLA database to a level equivalent with the NLM's Medline and PubMed services, particularly through improvements of the Web version, extent of coverage, and

linkages to full-text and summaries. Related to this, complete the retrospective conversion of the NAL catalogue to digital form for inclusion in the ISIS online catalogue.

- d. Further develop the [Agriculture Network Information Center \(AgNIC\)](#) Alliance and Program as a portal to agricultural information, data, and resources, and as the foundation for a national digital library for agriculture.
- e. Continue to build the NAL Information Centers as subject gateways to key topics of particular interest to citizens, policy makers, and scientists, based on frequent user surveys and knowledge explosion.
- f. Identify and initiate cost-effective improvements and expansion of the current document delivery service.
- g. Update and implement the Technology Plan of 2002 with modifications as needed to accommodate recent and emerging advances in technology.

II. Organizational Structure

- a. The NAL should change its self-concept from being a place to that of performing customer-driven functions, and its national role from being the place where every item is, into the role of being the hub through which every item can be obtained online anytime.
- b. Update and reaffirm the NAL mission and vision statements to reflect its mandate as a national library and its commitment to the use of technology to meet the information needs of the U.S. citizenry. Formulation of these statements is the responsibility of the NAL Director and the proposed Board of Regents.
- c. Provide 30 percent increases in funding each year from now until the next 5-year review when programs and services will be formally reassessed and evaluated for successful initiation of new directions. The Panel believes the annual NAL budget should eventually reach approximately \$100 million (2001 dollars) to meet its Congressionally mandated mission in the digital age. This will provide sufficient resources to develop superior expert system search tools, to hire and retain the infotech talent it needs, to fill the growing gaps in its coverage of new knowledge in research journals and historical documents, and to ensure its security in view of the new security hazards it will face. It will enable the NAL to provide services and levels of service required of a National Library in the 21st century.
- d. Increase the number of positions by 50 or more during the next 5- year review period.
- e. Realign the NAL within USDA to reflect its national mission. To reflect this mission, the NAL should report directly to the Secretary/Deputy Secretary of Agriculture.
- f. Organize a Board of Regents, on the NLM model, to direct on long- range planning, advocate for the NAL within USDA and elsewhere, guide the development of new products and services, and monitor for quality in all services. A Strategic Planning Task Force should be appointed and serve until a Board of Regents is implemented.

- g. Develop a NAL Friends Support group to assist the Board of Regents and other groups in promoting NAL programs and services.
- h. Establish the position of the Director of the NAL in the Senior Executive Service, with a four or more year term, and renewed based on performance; library degree is preferred but not required.

(The strength of interest on the panel on this issue is represented by its range of opinions, ranging from one emphasizing an exclusive political appointment to opinions that were open to either/or: political appointment or inclusion in the Senior Executive Service, to opinions advocating inclusion exclusively in the Senior Executive Services.)

- i. Authorize the NAL to solicit and accept donations, with those funds exclusively designated for use by the NAL.
- j. Establish a Development Officer to enhance liaison with private foundations and individual donors.

III. Planning and Evaluation Processes

- a. Introduce a formal five-year review by external reviewers, including USDA personnel, to ensure progress on long-range plans and customer service orientation, with a 100 percent turnover of the membership of that review group every 4-5 years.
- b. Implement a system to obtain ongoing input from all categories of customers (web, in-person, mail, telephone), and summarize the information in an annual report. These reports should include actions taken in response to customer input and should be available to the public through the NAL website.
- c. Establish internal advisory groups from USDA agencies to provide feedback to NAL about its products, services, and long-range plans.
- d. Results from the five-year reviews and all other feedback data should guide the long-range planning process. Long-range plans should be developed for a five-year period, with annual updates by the Director and the proposed Board of Regents to ensure continued viability.
- e. Complete and implement a plan for a national digital library for agriculture (NDLA) that will be the main focus and long-term organizing principle for NAL and the national network of university and industrial libraries.
- f. Establish liaisons within NAL who will act as market managers to track specified NAL customer segments for their needs and user satisfaction.
- g. Develop a plan for facilities management and improvements, including space requirements, as an integral part of the long-range planning process.

IV. Leadership

- a. Provide leadership for and become the central hub of the world's agriculture libraries to facilitate

users' access and use of agricultural information on a perpetual basis using a knowledge management approach.

- b. Continue to develop the NAL role in the preservation of digital publications-and-data initiative of the USDA and in the National Digital Information Infrastructure and Preservation Program.
- c. Continue to take a leadership role in the development of national digital efforts to bring the wealth of agriculture-related information and knowledge to U.S. citizens by using the most advanced technologies and by developing the most advanced and easily used expert online search system available.
- d. Enhance contractual collaborative relationships with other governmental agencies and non-governmental units to meet the NAL's mission for collaborative collection development, preservation, and archival functions.

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8. Implementing Recommendations

The Panel is forwarding the executive summary of this report and the full report with appendices to Ann Veneman, Secretary of Agriculture and to Joseph Jen, Under Secretary of Research, Education, and Economics.

If the Secretary should decide that outside review of this report might serve her purposes, the following experts are offered for her consideration:

- Bob Dole, former U.S. Senate Majority Leader
- Bob Foster, former Congressional staff member.
- Eugene Garfield, Chair Emeritus, Institute for Scientific Information
- Suzanne Harris, Director, Human Nutrition Institute International Life Sciences Institute
- Richard Lucier, University Librarian, Dartmouth, and former University Librarian, California Digital Library (University of California)
- Clifford Lynch, Director, Coalition for Networked Information
- Anton Mangstl, Chief, Library and Systems Division, FAO, Rome
- Susan Nutter, North Carolina State University, Vice Provost and Library Director
- Jan Olson, retired Head of Mann Library, Cornell University
- Julia Peterson, retired CIO, Cargill
- Richard Rominger, former U.S. Deputy Secretary of Agriculture
- Jane Voichech Journal of Nutrition Education, Department of Nutritional Sciences, University of Wisconsin-Madison
- Clayton Yeutter, 1990 U.S. Secretary of Agriculture

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9. Members of the Panel:

Panel Members:

Dr. Larry N. Vanderhoef, Panel Chair, Chancellor, University of California, Davis
Dr. Martin A. Apple, President, Council of Scientific Society Presidents
Dr. K. Jane Coulter, Deputy Administrator, USDA
Dr. William B. Delauder, President, Delaware State University
Mr. Jay Hirschman, Director, Special Nutrition Staff, USDA
Dr. Austin Hoover, Library Archivist, New Mexico State University
Dr. Philip Hudson (deceased), Director, USDA Graduate School
Ms. Barbara Hutchinson, Director, Arid Lands Information Center, University of Arizona
Ms. Paula Kaufman, University Librarian, University of Illinois, Urbana-Champaign
Mrs. Margrit B. Krewson, Society for German-American Studies
Pearlie S. Reed, Chief, Natural Resources Conservation Service, USDA
Mr. Winston Tabb, Associate Librarian, Library of Congress
Mr. Robert Willard, Executive Director, National Commission on Libraries and Information Science

Consultants:

Dr. William Gray Potter, University Librarian, University of Georgia
Dr. Sarah E. Thomas, University Librarian, Cornell University

Staff:

Vincent P. Caccese, Instruction Librarian, University of California, Davis
Dr. Douglas Helms, Senior Historian, Natural Resources Conservation Service, USDA
Dr. Susan McCarthy, Technical Information Specialist, National Agricultural Library

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"Interagency Panel Survey Briefing Book October 25–27, 2000" – does not accompany this Report.

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Appendix A

Interagency Panel for Assessment of the National Agricultural Library

CHARGE

An Interagency Panel for Assessment of the National Agricultural Library (NAL) is hereby established. The Panel is to review the activities of the National Agricultural Library in pursuit of its mandate to serve as the chief agricultural information resource of the United States and to make recommendations to the Under Secretary, Research, Education, and Economics on NAL's management, staff, programs and operations.

The NAL serves as a national library, one of the four U.S. national libraries, the library of the United States Department of Agriculture, and as a leader in international agricultural library and information resources, under very different operational policies and programs.

The panel is being asked to complete its work within twelve months with the issuance of a final report. The Panel may not be extended beyond one year without special review and approval by the Deputy Secretary.

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Appendix B

The National Agricultural Library
 U.S. Department of Agriculture

1) Public Awareness of NAL:	
NAL should develop mechanisms to survey users needs continually and to establish priorities for services which would satisfy the most pressing needs.	<p>NAL carried out a customer satisfaction survey in 1995 (A copy is in the briefing book). NAL surveys customers semiannually on turnaround times.</p> <p>NAL has firmly established its web presence, offering value-added products as well as routine information such as library hours, a directory of services, and staff directories via the library's web site (http://www.nal.usda.gov). Prime examples are the AGRICOLA database and topic-specific resources made available through NAL's specialized information centers.</p>
NAL must become more aggressive in making its collections and services known, both to its end users in the Department and to the cooperators and future participants in the network. Listings in the services section of the USDA telephone directory; a special page in the directory listing libraries with hours of service and telephone numbers; an orientation or handout for new Departmental employees; special information events; and additional participation in USDA programs are but a few examples of how this public awareness campaign might be carried out.	<p>The NAL has produced and distributed an array of brochures and public affairs materials to make its collections, programs, and services known.</p> <p>The NAL also maintains an active schedule of tours, exhibits, and educational programs targeted to current and potential new audiences.</p> <p>In addition, the NAL is known through its significant World Wide Web presence. The USDA home page does not link to the National Agricultural Library.</p> <p>The NAL is barely listed in the USDA and other telephone directories.</p> <p>The NAL participates in new employee orientation for the Agricultural Research Service.</p> <p>In 2001, the NAL is carrying out a program to inform</p>

	USDA headquarters employees of NAL programs and services.
Films, video-tapes, and articles in agriculturally-related scientific and technical journals (especially publications of scientific societies) and the general press should serve to make NAL known as a national resource of agricultural information.	NAL has produced several videotapes, CD-ROMs, and articles in agriculturally related scientific and technical journals to publicize NAL collections, programs, and services.
2) Mission:	
<p>Adoption by NAL of the mission statement in the Executive Summary and on page 7 of the Findings and Analysis section of this report.</p> <p>The National Agricultural Library (NAL) serves as the Nation's chief agricultural information resource. It provides agricultural information, products, and services to agencies of the USDA and to public and private organizations and individuals. The NAL coordinates a national network of public and private agricultural libraries and information centers, especially with libraries of the land-grant colleges and universities, and other state supported colleges and universities with agriculturally related programs, other public organizations, and industry and other private sector organizations.</p> <p>The NAL ensures the acquisition, organization (including cataloging and indexing), management, preservation, accessibility, and diffusion of information in all phases of the agricultural and applied sciences, as set forth in Title XIV of the Food and Agriculture Acts of 1977 and 1981. A significant part of this mission is the development and coordination of a national agricultural science information network. The NAL provides leadership for the management of agricultural information resources through products and services, including bibliographies, loans, photocopies, microforms, structured agricultural thesaurus, computerized data base repositories, indexing of agricultural information, and personal reference and research services including on-line computerized literature searches. NAL works closely with other agencies in the Department, coordinates closely with the National Library of Medicine (NLM) and Library of Congress (LC), and cooperates with other groups in both the public and private sectors, to ensure that the results of research and other types of agricultural information are rapidly disseminated to the ultimate user. NAL promotes the use of modern technology in support of library and information activities.</p>	<p>In November 1990, Public Law 101 624 NOV. 28, 1990 the "Food, Agriculture, Conservation, and Trade Act of 1990" officially established the National Agricultural Library "to serve as the primary agricultural information resource of the United States."</p> <p>The NAL initiated a new strategic planning process In 1993. In the first phase of this process NAL conducted environmental scans and restated its mission:</p> <p>The National Agricultural Library ensures and enhances access to agricultural information for a better quality of life. The National Agricultural Library:</p> <ul style="list-style-type: none"> · Serves as a National Library of the United States and as the Library of the U.S. Department of Agriculture. · Acquires, organizes, manages, preserves, and provides access to information and provides quality stewardship of its unique collection. · Assists, trains, and educates people based on assessment of their information needs. · Provides leadership in information management. · Maximizes access to information through collaborative efforts and utilization of technology. · Enhances global cooperation through international exchange of information and the provision of services and technical assistance.

The NAL provides leadership for U.S. participation in international agricultural library and information systems and in efforts to promote worldwide availability of agricultural information. In addition, the NAL serves as the Nation's major source of agricultural information received from and relayed to other countries, as the agricultural information liaison to international organizations and organizations outside of the United States, and as the U.S. agricultural representative in the setting of library and information standards internationally.

3) Departmental Placement:

General policy direction and guidance come from the Office of the Secretary on the advice of the Advisory Council with operational and administrative supervision delegated to an operating arm of the Department. However, the Panel strongly recommends against locating NAL under the Administrative Management arm (Assistant Secretary for Administration).

In 1982, the NAL had been newly reestablished as a separate agency within USDA's science and education structure. On the Panel's recommendation, the Library quickly hired administrative and budget officers, transferred financial management and building management back to NAL, and took other steps to become administratively self-sufficient. As part of a December 1994 USDA reorganization which reduced the number of separate USDA agencies from 43 to 28, the NAL was merged into the USDA Agricultural Research Service, which provides policy direction and guidance, and operational and administrative supervision.

4) Advisory Council:

The establishment of the National Agricultural Library Advisory Council appointed by and reporting to the Secretary; that the Department prepare draft legislation to establish the Advisory Council.

1990 efforts to get language into the Farm Bill establishing an Advisory Council failed at the last minute.

In 1995, the NAL developed for USDA a 1995 Farm Bill proposal to create an advisory council. USDA did not send the proposal to the Congress.

That this Advisory Council advise the Secretary on general matters of library and technical information policy; that it conduct ongoing evaluations of NAL's programs and services, and prepare an annual report with recommendations, to the Secretary.

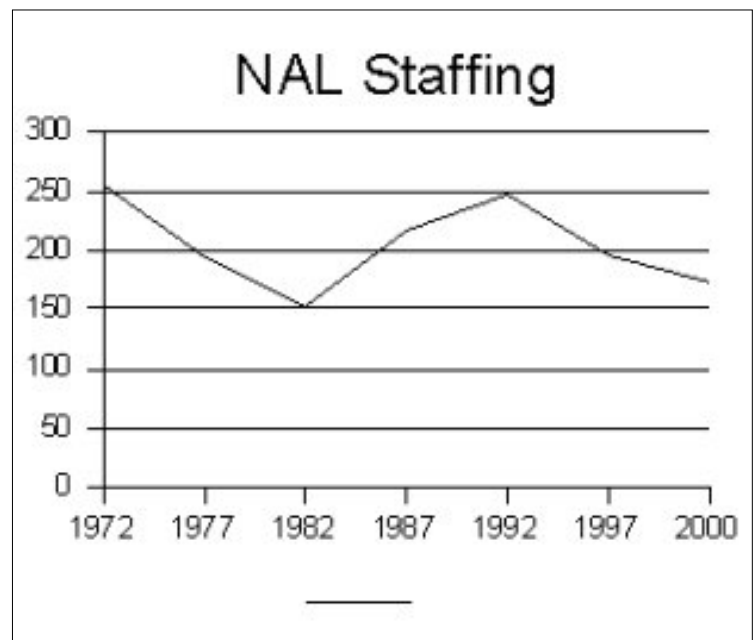
This element was incorporated into the 1990 and 1995 proposals.

That the Council should consist of 10 members appointed by the Secretary for a term of four years each with staggered terms for continuity, and additional ex officio members as indicated below.

This element was incorporated into the 1990 and 1995 proposals.

That membership on the Council be equally representative of the library and information science communities, agricultural industry, and agriculturally-related associations and academia. One member should represent international concerns (e.g., AID s Agricultural Science).	This element was incorporated into the 1990 and 1995 proposals.
That in addition to the 10 members, users of NAL be represented by ex officio members including at least two Administrators of USDA agencies, rotating every year and representing the social sciences, biological and physical, research areas, and Extension and action program agencies. Additional ex officio members should include: the President of an agriculture and allied science professional or association; b.the President of the National Academy of Science; c.a representative of the land-grant universities designated by Division of agriculture, NASULGC; d.a representative of non-land grant universities designated by Association of University Administrators of Agricultural Programs; and e.the Librarian of Congress. Ex officio members serve with voice, but no vote.	This element was incorporated into the 1990 and 1995 proposals.
The Council members shall elect the chairman and vice-chairman; the Council shall meet at least once a year or at the call of the Chairman.	This element was incorporated into the 1990 and 1995 proposals.
5) Internal Organization and Staffing:	
Consider reorganization which would separate library functions to support USDA from true national library functions. Major elements of the reorganization should include organizational units such as technical services, reading and reference services, bibliographic services, and specialized information services. Departmental services should be coordinated by a small staff in the specialized information service division, which derives its services and products from the national library.	The NAL reorganized between 1983 and 1984, based on proposals from Blue Ribbon Panel 1982. The Information Systems Division reorganized into two branches, in 1986. The Technical Services Division reorganized into three branches, in December 1986. The Public Services Division reorganized into three branches, in February 1987, and reorganized into two branches in August 1998.
NAL should contract with a highly qualified outside consultant specializing in management analysis to review and make recommendations regarding the workflow within the Library. However, the NAL management should also recognize that, should it undertake to implement in full or in part the recommendations presented in this report, there would be an impact on workflow which might alleviate, and in some cases eliminate, the current problem which results primarily from strong internal disagreements.	Upon becoming NAL Director in 1983, Joe Howard recruited a new management team and reorganized the NAL. This solved the workflow problem within the Library.

Increase staffing, with redirections when possible, by 50 positions capable of improving technical, bibliographic, specialized information services, and network development and coordination. This increase should occur over a two year period.



Emphasize selection of staff competent to perform in a networking and high technology environment. High levels of professional and technical knowledge and skills are necessary if NAL is to participate fully in cooperative programs at national and international levels.

All employees at the NAL use computers in their daily work. Consequently, computer literacy is a key element in hiring professional and support staff in NAL. With increased use of electronic information, NAL has recruited, trained, and retained staff with high levels of professional and technical knowledge of information technology and its applications to the work of the National Agricultural Library.

Areas, such as translations, which require extensive resources with uneven demands, should be considered for contracting. NAL has made extensive use of contracts and private sector capabilities and this should continue.

NAL, using PL480 funds, established and maintained contracts with two companies to provide translations of foreign language materials. As this funding source was depleted, NAL directed USDA employees to private companies providing translations services. NAL does not endorse any company but does provide a list of potential vendors via the NAL Web site.

Increase ratio internally, of non-professional to professional staff, dependent on level of use of contracts in support of various functional areas.

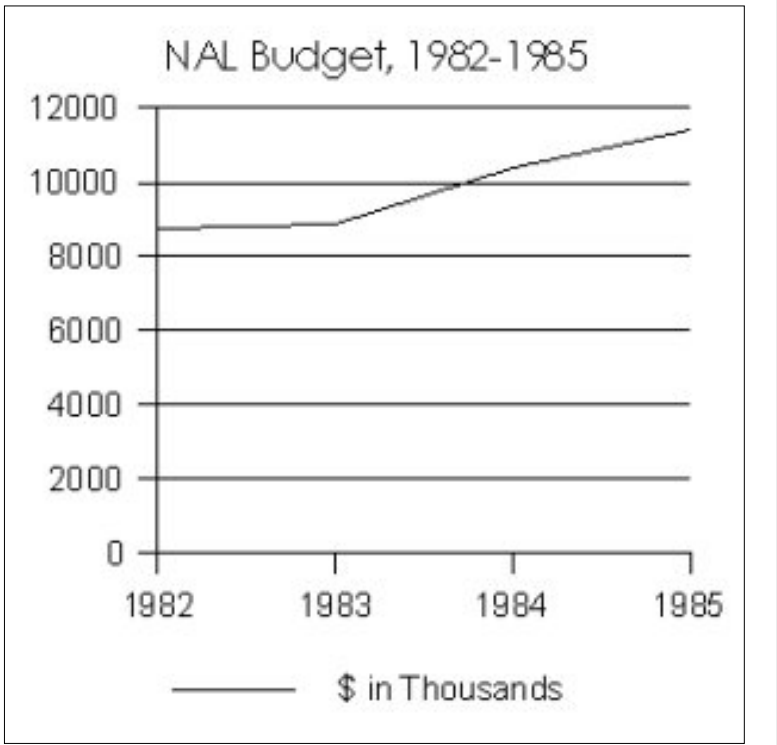


The Food and Nutrition Information Center (FNIC) should be moved back into NAL, under a specialized information services division.

The Food and Nutrition Information Center was re-incorporated into the Public Services Division of NAL in November 1984. It is currently in the Information Resources Services Branch with the other NAL information centers.

6) Budget and Funding:

Increase budget by approximately \$3 million over a two year period; this funding to be used to upgrade NAL s basic services and activities such as acquisitions, technical processing, improved library and information services, including interlibrary loans and computer based services, to their former level.



Provide additional resources for the development of a network to support regional and local information services and specialized centers of subject matter information at land-grant colleges and large agricultural stations; and to raise use of technology to an acceptable level in support of the network and internal operations.

The NAL and representatives of land-grant university libraries formed the United States Agriculture Network (USAIN) in July of 1988. This network is comprised of libraries and information centers in the fields of agriculture and related sciences. Its mission is to provide a forum for discussion of agricultural issues; to take a leadership role in the formation of a national information policy as related to agriculture; to support the National Agricultural Library (NAL) on agricultural information matters; to promote cooperation and communication among its members, and with other organizations and individuals.

Under NAL leadership AgNIC was established in 1994 by an alliance of agricultural organizations as a discipline-specific, distributed network on the Internet. In 1995, NAL established the AgNIC Web site with a calendar of events and a database of agriculture resources. In 2000, AgNIC is a partnership of nearly 40 agricultural information organizations operating a network of 28 subject-specific sites, with over 20 additional subject sites expected by the end of 2001.

<p>NAL should increase its user fees for interlibrary loans and photocopies by at least \$2.00 per item. This should be done stepwise while service and quality level is being upgraded. (Current charges are \$3.00 for the first 10 pages and \$2.00 for each additional 10 pages.)</p>	<p>Effective April 1, 2000 NAL increased the user fees for interlibrary loans, including photocopies, microfiche and microfilm. In addition, NAL imposed a new user fee for borrowing original materials and for obtaining reproductive services from Special Collections. The fee charged by the National Technical Information Center to perform the collection of funds generated by billing is also passed on to the customer for the 1st time. This new fee structure makes it cost effective to bill for service and brings NAL into line with the fees charged by the other major research libraries in the country.</p>
<p>NAL should increase the sale and lease charges for its data tapes. These increases should be implemented gradually over time, as the quality of indexing in AGRICOLA and the system which supports it is being improved. NAL should permit NTIS to make decisions regarding prices for NAL products provided through NTIS. Current year subscription is presently \$720.00; back files from 1979 to date are \$480.00.</p>	<p>NAL and NTIS have worked collaboratively to keep pace with the technology and to gradually increase the lease price of AGRICOLA to its present \$3,000.</p>
<p>User fees for on-line data base searching should be increased, as well as "per hit" charges. Current fees are \$2.00 per connect hour for domestic users; \$3.00 per connect hour for foreign users.</p>	<p>Usage fees were changed from a connect-hour basis to a citations-retrieved basis.</p>
<p>Current Awareness Profile charges should be introduced and a charge instituted for citations "hits". Internally to USDA, Agencies should continue to contribute a block of funds to NAL to cover the cost of providing CALS services to their staff.</p>	<p>CALS is now offered only to USDA agencies, which reimburse NAL annually for costs incurred by their staff. The method of providing this current awareness service has also changed several times since 1982 to make use of new technologies and resources.</p>
<p>NAL should continue its practice of involving the contractors and private sector organizations in carrying out its responsibilities of making information available to the public. Particularly appropriate for review are indexing and processing, and translations.</p>	<p>NAL has had a document delivery contract in place since 1971. About every 5 years increasingly complex tasks have been added to the contract. As Federal staffing levels have decreased, many of the tasks previously performed by Federal employees were added to the contract. In FY 1999 a contract was awarded to an 8A company to provide staffing to NAL for specific kinds of work including librarians, technicians, computer assistance etc. This contract has been very successful and allows NAL to quickly acquire staffing to complete specialized projects within the time frames required and funding allocated.</p>
<p>NAL should sell its specialized bibliographies and other publications, either through NTIS or directly. Charges should be consistent with those in USDA policies, and should apply to all NAL publications.</p>	<p>NAL routinely makes its information products freely available through the web. Resources which are substantial and justify alternative means of distribution are made available through NTIS (such as CD-ROMs and AGRICOLA database).</p>

<p>NAL should work with the Office of the General Counsel and the Departmental Budget staff to establish the necessary procedures and controls to permit use of user fees to offset the costs of carrying out programs and services, and to permit use of gifts to support special projects and collections.</p>	<p>In November 1990, Public Law 101 624 NOV. 28, 1990, the "Food, Agriculture, Conservation, and Trade Act of 1990" officially established the National Agricultural Library "and amended Title 7 of the U.S. Code to:</p> <ul style="list-style-type: none"> · authorize the NAL Director to sell Library products and services "at such prices (not less than the estimated total cost of disseminating the products and services) as the Secretary may determine appropriate." · authorize the Secretary of Agriculture "to accept, receive, hold, and administer" ... "gifts, bequests, or devises of real and personal property made unconditionally for the benefit of the National Agricultural Library or for the carrying out of any of its functions."
<p>7) Policies:</p>	
<p>The Panel recommends that NAL update its present mission and policy statements.</p>	<p>The NAL restated its mission in 1993:</p> <p>The National Agricultural Library ensures and enhances access to agricultural information for a better quality of life. The National Agricultural Library:</p> <ul style="list-style-type: none"> · Serves as a National Library of the United States and as the Library of the U.S. Department of Agriculture. · Acquires, organizes, manages, preserves, and provides access to information and provides quality stewardship of its unique collection. · Assists, trains, and educates people based on assessment of their information needs. · Provides leadership in information management. · Maximizes access to information through collaborative efforts and utilization of technology. · Enhances global cooperation through international exchange of information and the provision of services and technical assistance. <p>NAL was merged into USDA s Agricultural Research Service in December 1994, and has since followed ARS policies and procedures, which are updated often.</p>

<p>Policy statements not presently in place (e.g., national programs) should be prepared and discussed with the NAL staff and users. NAL managers should see that policies are implemented at all levels of the organization.</p>	<p>The Library has done this continually since 1983.</p>
<p>Policies related to participation in international agricultural information activities such as AGRIS should be developed and followed, consistent with international activities of other U.S. libraries, especially the Library of Congress and National Library of Medicine.</p>	<p>The NAL contributes approximately 50,000 new citations to the AGRIS database each year. AGRIS is the international information system for agricultural science and technology, coordinated by the U.N. Food and Agricultural Organization. NAL serves also as the U.S. node of the Agricultural Libraries Network (AGLINET), another program coordinated by FAO, through which member libraries provide each other with priority interlibrary loan and photo reproduction services, usually without charge, and share bibliographic products to enhance location and referral services. NAL is also part of several international initiatives closely related to broader U.S. Department of Agriculture programs, including programs in Central and Eastern Europe and in Latin America and the Caribbean, and establishment of the Egyptian National Agricultural Library. NAL also offers in-service study and training in library management and technology in cooperation with the U.S. Agency for International Development (USAID), the USDA's Office of International Cooperation and Development, and other organizations. NAL has hosted individuals and study-groups from virtually every continent.</p>
<p>Policies governing cooperation with other libraries and agricultural organizations must be developed and implemented.</p>	<p>In 1991 NAL joined the Library of Congress, the National Library of Medicine and major U.S. academic research libraries in the National Cooperative Cataloging Program, later the Program for Cooperative Cataloging (PCC). NAL has been an active participant in all the PCC programs and provided the chair for the PCC policy committee 1997-2000.</p> <p>NAL has adopted national cataloging policies and standards, including the Anglo-American Cataloguing Rules, Library of Congress Subject Headings and the MARC formats for bibliographic, authority and holdings data.</p> <p>NAL participated in the development of joint collecting statements with the National Library of Medicine and the Library of Congress in the areas of food and human nutrition, biotechnology and veterinary science. These joint statements, which describe the coverage of the national collections, are intended to reduce redundant collecting. The statements also describe the lending policies of each of the national libraries.</p>

<p>Policies governing the development and use of an agricultural information network are essential to its success and must be developed and implemented.</p>	<p>The National Agricultural Library and representatives of land-grant university libraries formed the United States Agriculture Network (USAIN) in July 1988. This network is comprised of libraries and information centers in the fields of agriculture and related sciences. Its mission is to provide a forum for discussion of agricultural issues; to take a leadership role in the formation of a national information policy as related to agriculture; to support the NAL on agricultural information matters; to promote cooperation and communication among its members and with other organizations and individuals.</p>
<p>Policies on the handling of requests should be required to permit handling of more requests in an expeditious manner (e.g., limit the time spent in locating items not identifiable or readily available; permit use of OCLC for ILL s).</p>	<p>NAL has implemented a variety of policy changes which have reduced the handling of document delivery and interlibrary loan requests. Most requests are processed in 2 days. About 88% of requests are received electronically. Use of the Internet vastly expands the universe of resources available to identify those items which are considered to be "gray literature". NAL has agreements and contracts in place with vendors who provide document delivery services on those items which are outside of NAL s scope or missing from the collection.</p>
<p>Collecting policies should be updated to incorporate many of the recommendations below.</p>	<p>The Collection Development Policy was completely revised in 1988. It is continuously updated by addenda, the latest one issued in 2000.</p>
<p>8) Collection and Processing:</p>	
<p>NAL should be a national repository of all USDA technical information including data bases, complete collections of State and local data and reports, extensive collections of foreign materials, and all other agriculture and related subject area information in any format or medium. "Agriculture and related subject areas" is interpreted broadly to include food, fiber, nutrition, and social science as well as biological and physical research information in these areas. The repository should operate through distributed collections in centers of specialization accessible to all communities of users through NAL cooperative arrangements. Data on items in the repository should be accessible through AGRICOLA.</p>	<p>NAL collects all USDA technical publications. Databases are not collected comprehensively. USDA publications and databases are cataloged for AGRICOLA and some USDA publications are also analyzed and indexed.</p>
<p>NAL should concentrate on updating its major reference collection, filling gaps which have developed over the past few years.</p>	<p>The implementation of an integrated library management system, VTLS, provided an automated means to manage holdings, perform systematic claiming and fill identified gaps. NAL gives priority to filling gaps for items indexed in AGRICOLA and for retrospective materials in core agriculture.</p>

NAL should reflect the needs of its users in its collection policy and attempt to erase the impression that it serves only research.	The NAL collection is described as a research collection using the same criteria as for characterizing the New York Public Library as a research collection. In both cases, research is describing the depth and breadth of the collection, not the users. NAL attempts to serve the needs of all of USDA, not just researchers.
NAL should extend its coverage of foreign materials to specific areas and acquire these through exchange agreements and purchases. NAL should continue to cooperate with the Library of Congress in its program of acquiring foreign literature.	NAL makes extensive use of gift and exchange arrangements to acquire non-U.S. imprints, and is a participant in LC's overseas acquisitions program.
NAL should be acquiring federal documents in microform when they are available. Acquisition of documents in microform will not only insure their preservation, but will also save space and facilitate their servicing and use in satisfying interlibrary loan requests.	NAL is a federal depository library and receives microfilm of federal documents from GPO. GPO cataloging copy is added directly to NAL's online catalog for these materials.
9) Services and Programs:	
NAL should, with outside advice, design a new collection policy for manuscripts and unique print material, develop a systematic staffing plan, and a methodology for making known these special collections.	NAL collection policy for manuscripts and unique materials spells out the types of materials which are appropriate for addition to the NAL collection. A critical element of this policy is the requirement for financial resources to process the collection contents. An example of the success of this policy is the USDA History Collection, which was transferred to NAL in 1996 with funding to organize the collection and put the finding aid on the web.
NAL should increase the number of publications to which it gives minimal level cataloging, both monographs and serials considered to be of low research value or expected to generate little demand.	NAL has implemented minimal level cataloging and indexing for materials considered to be of low research value or not in demand for national level cataloging copy.
NAL should continue to use cataloging records produced by the GPO for processing government documents and should endeavor to accept GPO records with as little change as possible.	In the 1990s NAL began accepting GPO cataloging copy for materials acquired by NAL as a GPO depository library.
NAL should adopt standards for bibliographic control which will permit interchange of files and data bases and participation in national and international programs. NAL uses the MARC format, an international standard for the interchange of cataloging data. NAL cannot afford to go it alone; it must determine an appropriate format for its AGRICOLA and avoid frequent changes, making it more attractive to potential tape customers and to end users.	NAL has used the MARC format for AGRICOLA since 1979, while the alternate format was discontinued in the early 1980s. The MARC format and NAL's application of it are both stable and commonly accepted.

NAL must establish guidelines and procedures for handling requests to reduce turn around time and assure quality of the information provided.	NAL has implemented a variety of policy changes which have reduced the handling of document delivery and interlibrary loan requests. Most requests are processed in 2 days. 88% of requests are received electronically. Use of the Internet vastly expands the universe of resources available to identify those items which are considered "gray literature". NAL has agreements and contracts in place with vendors who provide document delivery services on those items which are outside of NAL s scope or missing from the collection.
NAL should provide a translation service through standing blanket order contract	NAL, using PL480 funds, established and maintained contracts with two companies to provide translations of foreign language materials. As this funding source was depleted, NAL directed USDA employees to private companies providing translations services. NAL does not endorse any company but does provide a list of potential vendors via the NAL Web site.
NAL should continue working with the Library of Congress to share foreign language expertise.	The NAL continues to work with the Library of Congress on a variety of projects.
NAL should expand its AGRICOLA training program to other user communities to encourage use of this data base. It should arrange for training in the use of other agriculturally related data bases for USDA employees.	NAL managed an extensive training and user education program for AGRICOLA until 1997 when the training program was de-emphasized and staff reallocated to other priorities.
NAL should provide umbrella contracts under which USDA employees would have direct access to outside data bases. NAL staff would continue to conduct literature searches from these data bases as requested by the users.	The NAL has licensed a number of electronic resources for use within the NAL building via its electronic media center. Financial resources have not been sufficient to make this center available on a large scale. The NAL policy is that USDA agencies underwrite the shared costs of an "NAL Digital Desktop Library" to provide direct access to this information.
NAL must extend its hours of service to cover needs of USDA and outside users. It must also provide evening and Saturday service if it is to perform as a true national library. Access to NAL s catalog and data bases should be available at least until midnight.	NAL s web presence is accessible to the world 24/7. Prime resources, such as the NAL catalog, AGRICOLA, and specialized resources are always available.
NAL must strengthen its security control to prevent loss of valuable materials from the collection.	Actions have been taken over the years to improve the physical security of the collections. In addition, NAL is currently planning the conversion of an office floor to secured stack space for the Library s most valuable and fragile materials. The current Security Task Force is completing the most recent review of security at NAL and the Management Team will identify which of the recommendations can be implemented.

NAL should rely more heavily on contractor support to reduce turn around time for loan and photocopy requests.	NAL has implemented a variety of policy changes which have reduced the handling of document delivery and interlibrary loan requests. Most requests are processed in 2 days. 88% of requests are received electronically. More than 77,000 items were delivered electronically in FY 2000 - vastly decreasing the amount of time it takes to get material into the hands of the patrons. NAL has agreements and contracts in place with vendors who provide articles directly to USDA patrons for those items which cannot be filled from the NAL collection.
NAL should extend its cooperative microfilming program to other special collections of material and specific subject areas.	NAL is the Land-grant Microfilm Depository, part of its national responsibility. In FY 1998 NAL acquired off-site storage space in Pennsylvania to house the masters of microfilm and microfiche created by the Land-grant Universities and deposited at NAL. NAL supports the writing of grants to obtain funds to microfilm agricultural documents. NAL is converting several print titles to electronic format, the preferred method of preservation.
NAL should reduce turn around time on requests to permit the use of OCLC for interlibrary loan requests.	NAL has implemented a variety of policy changes which have reduced the handling of document delivery and interlibrary loan requests. Most requests are processed in 2 days. 88% of requests are received electronically with OCLC requests constituting approximately 26% of those requests.
NAL should serve as the Department's interface with the National Technical Information Service (NTIS).	NAL continues to be the major contact point between USDA and NTIS, though diversified service offerings at NTIS mean that other USDA agencies may also have direct contact with units within NTIS.
NAL should serve as channel for making USDA agency technical data bases available to the public where appropriate and desirable, either through NTIS or other means.	NAL catalogs USDA electronic resources, including databases, adds them to AGRICOLA and provides URL linkages directly to the online databases for all users with Internet access.
NAL should serve as a coordinator clearinghouse and locator for information on USDA data bases, publications and other information media. Its data base should include data on formats, tape or file characteristics, subject coverage, contact point, data elements, and years of coverage. It should prepare catalogs from this inventory of USDA information as appropriate.	Inventories have been attempted several times, but the advent of Government Information Locator System (GILS) has supplanted separate NAL activities in this regard.

NAL should cooperate with the Extension Service, other USDA agencies and other groups in both the public and private sectors in developing programs to support educational and teaching efforts such as local learning centers and training in the use of agricultural information.	Through participation in educational events, such as meetings of the Future Farmers of America and others, NAL is actively pursuing its goal of delivery of quality information to its youngest audience. More advance information is disseminated through specialized information centers and targeted towards specific subject areas such as food safety and animal welfare.
NAL should update its directory of agricultural information sources and maintain this in an on-line data base to facilitate operation of an agricultural information clearinghouse and referral center. The clearinghouse data base should be available through AGRICOLA.	Much of this information is made available through the NAL Web site (http://www.nal.usda.gov). Other aspects are covered through the Agriculture Network Information Center (AgNIC), formed in 1994.
NAL must tighten its policy on circulating items and enforce the loan period to assure availability of materials.	NAL has implemented a variety of policy changes which have reduced the handling of document delivery and interlibrary loan requests. The loan period of 30 days is enforced, with follow-up and overdue notices sent at regular intervals. After NAL instituted delivery by FedEx of loaned materials, the loss rate dropped to 0%. In addition, NAL pays for the FedEx return of loaned materials from USDA employees - this allows them to keep the materials until the day before they are due and has almost eliminated the need for overdue notices.
NAL should continue the ALIN newsletter as a valuable means of communication with agricultural libraries, notifying them of published and in process bibliographies, books and new journals.	<p>Though NAL recognized that ALIN provided a useful channel of communications on agricultural information activities, it ceased publishing ALIN with the December 1997 edition due to NAL concerns about the quarterly s timeliness and cost of production and distribution considering NAL s flat budgets and reduced staff.</p> <p>NAL in 2001 is developing format and schedule alternatives to consider that will fill the gap left by ALIN s demise. We want to use existing technologies to produce a timely new publication at less cost.</p>
NAL should issue other key word lists of foreign serials, similar to those for Slavic and Chinese serials.	In 1988 NAL assisted in the publication of the World List of Poultry Journals and in 1992, NAL co-produced the World List of Agricultural Serials on CD-ROM. New vendor products and distribution technologies have greatly reduced the need for more special serial lists by language or subject.
NAL should provide an "800" number for a message service to be used by librarians who need help from NAL.	NAL is emphasizing electronic means of communication with its users. Around the clock availability of the web and always open e-mail facilitates better means of accessing NAL s resources.
NAL should issue regional union lists of agricultural serials (in microfiche to reduce costs), to aid in collection developments and improve interlibrary loan service.	In 1988 NAL assisted in the publication of the World List of Poultry Journals and in 1992 NAL co-produced the World List of Agricultural Serials on CD-ROM.

<p>AGRICOLA</p> <p>NAL should immediately contract for a major systems study of AGRICOLA. Top management must commit to a major overhaul of the system, applying the latest technology in software and computer equipment, as well as high standards for input, format and vocabulary control. Since AGRICOLA is NAL's major tool for access to worldwide agricultural information, it should be given highest priority.</p>	<p>The AGRICOLA system has been studied, modified, upgraded, and replaced several times since 1982. NAL is considering a new system in 2001.</p>
<p>NAL should develop a thesaurus for AGRICOLA. In line with NAL's assuming a leadership role on both the national and international levels, NAL should accept AGROVOC, as is, as the thesaurus for AGRICOLA or, if this is not possible, to bring about the changes necessary to AGROVOC to make it acceptable through participation in pertinent international activities.</p>	<p>NAL adopted the CAB International thesaurus in 1985.</p>
<p>NAL should investigate with OCLC the possibility of producing AGRICOLA through that bibliographic utility. A record linking technique which accommodates analytical entries has been agreed upon and will be published shortly. NAL should negotiate with OCLC regarding implementation of the new technique on that system and regarding subsequent input of analytic entries from AGRICOLA to OCLC.</p>	<p>The record-linking technique was included in the MARC format and adopted by NAL in 1984. This recommendation was made before NAL implemented the current integrated library management system which provide customized validation and input support that was not available on OCLC in the 1980s. As recently as 1998, NAL discussed AGRICOLA requirements with OCLC and found that they could not support indexing without changes to the OCLC's World Cat operations.</p>
<p>10) International Activities:</p>	
<p>NAL should participate more actively in AGRIS and its many activities to assure U.S. influence on policy direction and program development.</p>	<p>The Food and Agriculture Organization (FAO) of the United Nations is a major international partner of NAL. FAO coordinates the AGRIS database (AGRIS is the international information system for agricultural science and technology). AGRIS is produced cooperatively through the efforts of 199 national centers, 20 regional centers, and 9 intergovernmental centers which assume responsibility for providing bibliographic control over the agricultural publications produced within their respective countries. NAL contributes approximately 50,000 new citations to the AGRIS database each year.</p>
<p>NAL should participate in, and spearhead if necessary, efforts to achieve international agreements on formats, divisions of responsibility, content of machine-readable data bases pertaining to agriculture and distribution of these data bases. The long-range goal should be the creation of an international machine-readable agricultural data base realized through cooperation. This cooperation should result in international standards which NAL, because of its influence on their development, can accept.</p>	<p>NAL cooperates with FAO in building the AGRIS database. NAL Director Pam Andre chaired the AGRIS/CARIS steering committee overseeing the redesign of the system in 1988. In addition, NAL has worked with CAB International to combine special subsets of AGRICOLA records for distribution of CD-ROMs to South America (Agroambiente) and Integrated Pest Management for Southeast Asia.</p>

NAL should enhance its formal agreements to cover its exchange and other programs with foreign governments.	NAL coordinates the USDA publication exchange program, offering USDA publications in exchange for publications of comparable value from foreign governments and institutions that would be difficult to acquire through regular channels. Currently, the NAL initiates and coordinates these exchanges with over 5,000 partners from 118 countries worldwide. The Library's active publication exchange program accounts for about 70% of all periodicals currently received.
In addition to exerting national leadership, NAL should play a major role in the development and execution of standards and cooperative ventures at the international level.	The NAL has been an active participant in the National Information Standards Organization (NISO), as well as a collaborator with the U.N. Food and Agriculture Organization (FAO) and others on international standards development.
11) Use of Technology:	
NAL should establish an Automated Systems Planning and Oversight Committee. The Committee should include four to six members representing all major operating units of NAL, including administration. It should be chaired by a high-ranking member from the Director's Office who would be fully knowledgeable of library operations and all the information programs supported by the library and be recognized as speaking for the Director on automated systems planning matters. Subject matter expertise in library operations, reproduction, computer technology, communications, information retrieval, etc., must be provided by a Committee member or supporting task groups or temporary members for specific projects.	NAL established a similar committee in 1983 to procure a new integrated library system and manage its operation. At this time, such functions are performed by the NAL management team.
<p>The Committee should develop a comprehensive list of all information systems and programs operated by or for the library in support of:</p> <p>Acquisition, Indexing, Circulation, Warehousing, Series Control, Card Catalogs, Collection, On-Line Retrieval, Reference, Profile Processing, Cataloging, Data Bases, Abstracting, Bibliographies</p>	These actions are all part of the effort to obtain an integrated library system, completed in 1987.

<p>Establish a Technical Review Task Group of responsible Library staff members to query other libraries and information centers about their use of current technology and report back to the Oversight Committee. Additionally, it should use outside expertise to determine the state-of-the-art of available technologies, and systems to support:</p> <p>On-line Input, On-line Search, Microform Storage and Distribution, On-line Cataloging, Library Network, Image Transmission, Video Disk, Optical Disk, Micro/Minicomputer, etc.</p>	<p>These actions are all part of the effort to obtain an integrated library system, completed in 1987.</p>
<p>That the Oversight Committee recommend an overall system that would meet the current and future needs of NAL. The selected overall system should provide the widest possible flexibility for selecting specific equipment for the individual processes developed. A Systems Development Task Group should then be appointed to develop the details of the proposed system. Members of this Task Group should have expertise in the technologies designed into the system. To the extent possible, NAL staff members should be utilized, but, if necessary, additional help could be obtained from other agencies, if available, or from a contractor.</p>	<p>These actions are all part of the effort to obtain an integrated library system, completed in 1987.</p>
<p>Re-examine the decision which led to NAL obtaining primary support from the Washington Computer Center (WCC). There is now general consensus that distributed systems are preferable to complete reliance on a large mainframe computer. Costs of using a large central facility can no longer be justified.</p>	<p>NAL has gradually replaced its dependence on WCC and NITC mainframes with mini- and micro-computer systems of its own.</p>
<p>NAL should use existing state-of-the-art library and information systems applications and software where possible rather than independently design, develop and implement new systems.</p>	<p>This is NAL s approach.</p>

12) Agricultural Information Network:

<p>NAL must develop a formal plan for a national agricultural information network consistent with Congressional and Departmental intent and expressed user interests. This network plan should incorporate participants, programs and services, and communications requirements. It should reflect a well thought out approach to resource sharing among the participants, in terms of specialized collections, timely processing of information and provision of services. Decentralized services points should be established to assure equality of access at the lowest possible cost to any participant or user of the network.</p>	<p>The NAL and representatives of land-grant university libraries formed the United States Agriculture Network (USAIN) in July of 1988. This network is comprised of libraries and information centers in the fields of agriculture and related sciences. Its mission is to provide a forum for discussion of agricultural issues; to take a leadership role in the formation of a national information policy as related to agriculture; to support the National Agricultural Library (NAL) on agricultural information matters; to promote cooperation and communication among its members, and with other organizations and individuals.</p> <p>In 1995, NAL established the Agriculture Network Information Center (AgNIC) (http://www.agnic.org), a discipline-specific, distributed network on the Internet. AgNIC provides quality agricultural information selected by a coalition involving the National Agricultural Library, Land-Grant Universities, and other institutions. In 2000, AgNIC greeted five new members, bringing the partnership to nearly 40, and offered 28 subject-specific sites, with over 20 additional subject sites expected by the end of 2001.</p>
<p>NAL should assume leadership of a national program for the acquisition, cataloging and indexing of agricultural materials. NAL has not been represented at meetings of the American Library Association or at other forums for discussion and development of national standards and national cooperative programs. Only through aggressive participation in such activities can NAL attain the visibility and stature necessary to influence the development of acceptable standards and promote cooperative efforts. NAL itself has much to gain through standardization and cooperation at the national level.</p>	<p>NAL's Head of Acquisitions represents the library at the discussion group of the Collection Development Officers of Large Academic and Research Libraries at ALA; the Associate Directors of Technical Services and Public Services sit on similar round tables with colleagues from the major US academic and research libraries. NAL is a voting member of the National Information Standards Organization (NISO) and the Federal Libraries and Information Centers Committee (FLICC).</p>
<p>NAL should continue its current arrangements with On-Line Computer Library Center (OCLC) and should continue working with OCLC management and staff to insure the timely and widespread availability of bibliographical data for agricultural materials. NAL's use of OCLC not only makes its cataloging output available to many other libraries throughout the country, it also affords NAL the means to take advantage of the bibliographical work produced by other institutions. In short, OCLC can serve as a very effective tool for a national cooperative cataloging program for agricultural materials. NAL itself should be the national bibliographical center for publications in agriculture. However, one of its important functions as a leader should be the establishment of programs for delegating</p>	<p>NAL continues to utilize OCLC as a central source of bibliographic information for materials in its collection as well as for partners in the National Agricultural Cooperative Cataloging Program (AGX). Libraries of 12 land-grant institutions add cataloging records to OCLC which are downloaded to NAL and redistributed via AGRICOLA. NAL was an active participant in OCLC's InterCat project in 1995-1997 to create a large central database of Internet resources and continues its involvement in developing standards for cataloging Web resources through OCLC's CORC project. Records of microfilm masters for USAIN's National Program for the Preservation of Agricultural Literature are added to OCLC and to AGRICOLA for widespread distribution to other libraries. NAL Director Pam Andre is on the</p>

to other centers for agricultural research, extension, and higher education throughout the nation, responsibility for cataloging certain categories of agricultural publications.	OCLC Research Libraries Advisory Committee.
NAL should serve as a clearinghouse for agricultural information anywhere. This will permit referrals to sources better prepared to provide responses to many specific requests.	NAL helped launch and serves as secretariat for the AgNIC initiative that functions as a gateway to centers of excellence in agricultural information. NAL's information centers participate as AgNIC sites for providing responses to information needs in their respective areas of expertise.
NAL should assume leadership in the development and coordination of national cooperative programs for the acquisition of agricultural materials. While NAL should serve as the Library of last resort for agricultural research materials not available elsewhere in the country, it should also undertake to delegate to other centers responsibility for collecting certain categories of agricultural publications. Similar efforts are already underway in the Research Libraries Group and the Association of Research Libraries. Just as they have come to endorse sharing of bibliographical data, libraries have come to realize rising costs and budgetary constraints necessitate their sharing responsibility for the acquisition and servicing of the publications as well.	NAL has coordinated cooperative programs to ensure the identification and bibliographic control of publications from state extension offices and experiment stations. As these publications transition to electronic versions, NAL is working through AgNIC to develop rapid and effective means of access to the full text of state publications.

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National Agricultural Library Assessment Report

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Appendix C

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National Agricultural Library
U.S. Department of Agriculture
Agricultural Research Service

March 1, 2001

Legislative and Administrative Milestones, 1982-2000

National Agricultural Library

Aug. 1982	Interagency Panel for the Assessment of NAL (Blue Ribbon Panel 1982) report, Assessment of the National Agricultural Library-Final Report to the Secretary, is presented to Secretary of Agriculture John Block.
June 1983	Joseph H. Howard named NAL Director, June 14, 1983 by USDA Assistant Secretary Orville G. Bentley.
1983-1984	NAL reorganizes based on changes proposed or endorsed by the Blue-Ribbon Panel 1982.
June 1986	NAL establishes a Visiting Scholar Program with Dr. Tony P. Mazzaccaro, a specialist in aquaculture and marine sciences, as the first participant.
Sep. 1986	NAL awards a contract to Virginia Tech Library Systems, Inc. to install an integrated library system incorporating the latest computer technology and software in the Library over a 2-year period. The award follows two years of assessing needs, evaluating proposals, and testing potential systems, and carries out Blue Ribbon Panel 1982 recommendations to acquire a turnkey system.
July 1987	NAL joins APHIS and ARS in signing an Interagency Agreement with the Food and Drug Administration (FDA) to cooperate in sharing information of mutual interest.
July 1988	NAL and the land-grant libraries establish the United States Agriculture Information Network (USAIN), a network of libraries and information centers in agriculture and related subjects, and elect officers at the first meeting.
Sep. 1988	NAL and the National Association of State Universities and Land-Grant Colleges (NASULGC) renew their commitments to cooperate to advance the ways in which agricultural libraries can improve services to researchers, educators, students, farmers, and ranchers.
1990	NAL Director Joseph H. Howard elected President of the International Association of Agricultural Librarians and Documentalists (IAALD) at its meeting in Budapest, Hungary.
Nov. 1990	NAL is officially established by Public Law 101-624-NOV. 28, 1990, the "Food, Agriculture, Conservation, and Trade Act of 1990" as "the National Agricultural Library to serve as the primary agricultural information resource of the United States"-the wording for the NAL Mission as recommended by Blue Ribbon Panel 1982.
March 1991	NAL and ARS sign a letter of understanding March 20, in which NAL agrees to "oversee development of a coordinated network of information services, programs and products for ARS researchers."

- Nov. 1991 NAL sponsors and hosts the 1st U.S./Central European Agricultural Library Roundtable (The 8th Roundtable is scheduled for May 2001.) at NAL, under the theme Information Transfer in a Global Economy: Forging New Connections, in cooperation with USDA's Office of International Cooperation and Development (OICD) and the NAL Associates. Libraries with national agricultural responsibilities of Bulgaria, Czechoslovakia, Hungary, Poland, Romania, and Yugoslavia participated. Participants created and signed a 5-year program of cooperation.

- Nov. 1992 NAL cosponsors Plant Genome I, an international conference, November 9-11, at San Diego, CA. Other cosponsors include ARS, Japan's National Institute of Agrobiological Resources, the U.K.'s John Innes Centre, the Rockefeller Foundation, and the publication Agro-Food Industry hi-tech.

- Feb. 1993 NAL initiates a strategic planning process and holds a half-day orientation meeting on strategic planning for all staff under the technical guidance of the Office of Management Studies of the Association of Research Libraries.

- 1993 NAL takes responsibility for an interagency pilot project to implement options for improving the Global Change Master Directory for the agencies participating in the U.S. Global Change Research Program (USGCRP).

- 1993 NAL hosts its first Cochran Fellows.

- Jan. 1994 NAL and the Inter-American Development Bank, in cooperation with IAALD, the Associates NAL, USAIN, and USDA's Office of International Cooperation and Development, host representatives of agricultural organizations in Latin American and Caribbean countries, January 24-28, for an intensive Inter-American Planning Workshop for [Agricultural] Information Transfer and Networking.

- Sep. 1994 NAL publishes its Mission, Values, Vision statements as part of the Library's strategic planning process.

- Nov. 1994 Pamela Q. J. André becomes Director of NAL, effective November 14.

- Dec. 1994 As part of a department-wide USDA reorganization which reduced from 43 to 28 the number of USDA agencies, NAL is merged with the Agricultural Research Service, which in turn is part of the USDA Research, Education, and Economics Mission Area.

- Jan. 1995 NAL Director Pamela Q. J. André elected to the IAALD Board of Directors.

- July 1995 NAL meets with library directors from 8 land-grant universities to plan actions to revitalize the relationship between NAL and the land-grant libraries. Participants discuss collections, services, preservation, international programs, electronic information initiative, and other interests.

- Aug. 1995 NAL's customer service team reports on the customer surveys distributed in the Spring; NAL is rated favorably by its customers.

- Oct. 1995 NAL achieves its 100th Anniversary as a government documents Federal Depository Library and is honored with a commemorative plaque by the Government Printing Office.

- 1996 NAL publishes 3 Key Result Areas and 11 Goals developed in the second phase of its strategic planning process. The third phase will be the development of operational plans within the library's divisions.
- Sep. 1996 NAL Director Pamela Q.J. André, participates in the opening of the Egyptian National Agricultural Library in Cairo, Egypt, September 6, after a decade of NAL assistance and cooperation.
- April 2000 NAL holds a symposium, Who Will Pay for On-Farm Environmental Improvements in the 21st Century?; a luncheon honoring Deputy Secretary of Agriculture Richard Rominger; and a public ceremony and reception officially dedicating the newly renovated 1st Floor.
- Aug. 2000 USDA establishes an Interagency Panel for Assessment of the National Agricultural Library ("A Blue Ribbon Panel 2000") to study the NAL and its services and make recommendations for the future.

Collection Building Milestones, 1982-2000 National Agricultural Library

- March 1984 NAL works with the Council on Botanical and Horticultural Libraries to develop a comprehensive list of nursery and seed companies, nurserymen, historical societies, museums and libraries to locate both old and current collections of nursery and seed catalogs.
- April 1984 NAL completes processing of two special extension collections donated by the Extension Service--dissertations, theses, and Federal and State extension publications--and the State Cooperative Extension Services of the Northeast Region-State extension publications from the Rutgers collection. With help of extension personnel and a contract with Zimmerman Associates of Falls Church, VA, nearly 5,900 titles were cataloged and input to OCLC between 1981 and 1983 of which 85% were new to the NAL collection. An additional 3,500 minimum level cataloging records were processed into OCLC of which 82% were original.
- 1984 NAL acquires entire microfiche collection of the Virginia Institute of Marine Science (VIMS) as part of a cooperative indexing agreement between NAL and VIMS. The bibliographic database, AQUACULTURE, has been online with DIALOG since 1980.
- 1984 NAL cooperates with the Forest Service through an interagency agreement in the development of FS INFO, an online network of field libraries and a bibliographic database supporting forestry.
- Jan. 1985 An agreement between NAL and the Aquatic Sciences and Fisheries Information System (ASFIS) on the coverage of aquaculture in AGRICOLA and ASFIS and products including the ASFA Aquaculture Abstracts becomes effective.
- June 1985 The Feed Composition Data Bank (FCDB) of the International Feedstuffs Institute (IFI) transfers from Utah State University to NAL. Transfer of the data bank is completed in September 1985.

- Sep. 1985 NAL offers access to the National Pesticide Information Retrieval System (NPIRS) which includes data on about 50,000 products registered by the EPA. NPIRS was developed at Purdue University through a cooperative agreement with the USDA.
- Sep. 1985 NAL and the Forest Service sign an interagency agreement September 30 transferring the Forest Service's historic photo collection to the National Agricultural Library. The head of the Forest Service photo library transferred to NAL with the collection. The agreement provides for a 3- year pilot study in which NAL will develop procedures and systems for handling and researching collections of visual materials.
- Dec. 1985 NAL receives a significant and comprehensive collection of materials on Agent Orange, the herbicide from the Veteran's Administration Library. About 2/3 of the collection relates to the effects of Agent Orange on plants and animals. It complements NAL's extensive holdings on herbicide research and includes monographs, newspaper and journal articles and reprints, technical reports, hearings testimony, audiovisuals, and a manual indexing system. NAL is seeking funds to catalog and index the materials for input into AGRICOLA.
- Jan. 1986 Feed Composition Data Bank is operational at NAL.
- April 1987 NAL accepts the transfer of the Pomological Watercolors Collection from the U.S. National Arboretum at its dedication of the Special Collections Reading Room on April 16.
- 1988-1989 NAL accepts transfer from the U.S. National Arboretum of the documentary photograph collection of more than 100,000 images from the Foreign Seed and Plant Introduction Service. The collection contains photographs from all over the world by renowned plant explorers and collectors, including David Fairchild, Frank N. Meyer, P. Howard Dorsett, Albert Spear Hitchcock.
- May 1989 NAL and Massachusetts Institute of Technology (MIT) agree to procedures to include appropriate MIT dissertations in AGRICOLA.
- April 1991 NAL accepts a bronze bust of Gifford Pinchot, first chief of the U.S. Forest Service; the life-size bust was sculpted by Rudolph Wendelin, and presented by the Pinchot Institute for Conservation. Dr. William Klein, President of the Pinchot Institute, made the presentation.
- 1991 NAL accepts the archives of the American Agricultural Economics Association.
- Aug. 1993 NAL discovers 11 agriculturally-related letters to and from Thomas Jefferson, including 3 original Jefferson letters, in a file being examined by ERS historian Anne Effland, and creates a nationwide flurry of interest with the announcement.
- 1993 NAL adds to its collection the 17-disc Compact International Agricultural Research Library: Basic Retrospective Set 1962-1986 (CIARL BRS), produced by CGIAR and the World Bank with NAL participation; it contains 1,350 titles (more than 190,000 pages) and over 50,000 graphic images.
- 1997 NAL receives the USDA History Collection from the former Agricultural and Rural History Section of USDA's Economic Research Service; NAL assigned a full-time archivist and several part-time graduate students to process and organize the collection and establish a USDA History Collection Web site.

- 1998 NAL signs an agreement with the Biblioteca Central Magna (BCM) of the Autonomous University of Nuevo Leon (UANL), Mexico, to cooperate in enhancing access to agricultural and related information; both have been exchanging information and working together to improve services on an informal basis since 1996.

Agricultural Information Access Milestones, 1982-2000 National Agricultural Library

- July 1983 NAL creates a new regional document delivery systems region covering Michigan, Ohio, Pennsylvania, New York, with the Mann Library at Cornell serving as coordinator.
- 1984 NAL contracts with Bibliographic Retrieval Service (BRS) in Latham, NY, to develop a pilot prototype full-text database containing the entire content of the Pork Industry Handbook, the first full-text database produced by NAL. The final products, an online computer version searchable through BRS or a laser videodisc for use on a microcomputer, are available in summer 1985. Purdue University coordinates evaluation of the disc and database.
- Dec. 1984 Secretary of Agriculture John R. Block signs an agreement under which NAL will receive funds from the American Florists Endowment (AFE) to be used to disseminate information on floriculture to growers, wholesalers, and retailers in the floriculture industry; NAL receives an initial sum of \$30,000; in addition AFE presents \$10,000 to the Associates of NAL, Inc., to enhance access to floriculture literature.
- 1986-1987 NAL inaugurates its National Agricultural Text Digitizing Project (NATDP). NAL assembles a panel of land-grant library directors to evaluate the system, September 12, 1986. Subsequent cooperative agreements determine the operation of the project. By spring 1987, NAL and 41 land-grant libraries are participants in the project.
- 1987 NAL and University of Maryland Center for Instructional Development and Education, under a cooperative agreement, begin production and filming for an interactive laser videodisc training course for searching the AGRICOLA database; the course is to be known as AGRICOLearn.
- Oct. 1987 NAL officially unveils its Forest Service Photographs Videodisc with a ceremony and demonstration at USDA's Williamsburg Room on October 20. At the same event a project to create a laser videodisc containing historical and archival photos from USDA agencies is proposed. The official USDA photographs collection maintained by the Office of Information are to be included.
- 1987 NAL and CAB International cooperate in the preparation of a World List of Agricultural Serials.
- April 1988 NAL begins participation in the Association of Research Libraries (ARL) preservation planning program, a self-study consulting program assessing the Library's preservation practices and needs. The preservation study was completed in 1989.
- 1988 NAL introduces ALF: Agricultural Library Forum, its micro-computer-based, dial-in, electronic bulletin board system for exchanging and disseminating agricultural information.

- Sep. 1988 NAL provides self-service searching of CD-ROM products at both the Library's main location in Beltsville and the Library's DC Reference Center.
- Sep. 1988 NAL expands its interlibrary loan services, previously expanded in September 1987, to include receipt of requests via TWX/TELEX, telefacsimile (i.e., fax.). NAL also receives requests forwarded from NLM via DOCLINE.
- March 1989 NAL distributes Aquaculture I, the first National Agricultural Text Digitizing Project (NATDP) CD-ROM, which contains the text and page images of 62 aquaculture reference publications, to the 44 land-grant libraries participating in the project.
- Fall 1989 NAL and the Consultative Group on International Agricultural Research (CGIAR) release Food, Agriculture, and Science, the first multi-lingual, agricultural research CD-ROM in a series that will include 6,000 titles.
- Jan. 1990 NAL announces at ALA Mid-Winter in Chicago that the NATDP CGIAR CD-ROM is being evaluated, the Acid Rain 3-disc CD-ROM has been mastered and will be distributed in March, and the Agent Orange CD-ROM will be distributed for evaluation in April.
- March 1990 NAL and the Extension Service announce completion of their joint National CD-ROM Sampler: An Extension Reference Library; it contains more than 12,000 documents (over 50,000 pages), 1,500 graphics, 50 computer programs, and 14 minutes of audio.
- April 1990 NAL executes a cooperative agreement with Mann Library at Cornell University to participate in the Core Agricultural Literature Project and contributes \$15,000 for work on the Agricultural Engineering volume.
- 1990 NAL issues REGIS II, the second generation of a computerized information project on African aquaculture.
- Oct. 1990 NAL and USDA's Office of Governmental and Public Affairs complete and issue the Photographic Collection of the United States Department of Agriculture laser videodisc.
- Oct. 1990 NAL distributes the Agent Orange CD-ROM to land-grant libraries participating in the NATDP, October 19.
- Jan. 1991 NAL announces that the third phase of the NATDP, transmitting digital images over the INTERNET, has produced images "markedly superior to facsimile transmissions."
- April 1991 NAL announces the National CD-ROM Sampler: An Extension Reference Library, completed in March 1990, is available for sale from Virginia Tech, one of the partners in the project.
- June 1991 NAL completes mastering of the Food Irradiation CD-ROM as part of the NATDP.
- Aug. 1991 NAL publishes a Global Change Information Packet, containing reprints of articles supporting and rejecting the global change concern, bibliographies, a guide to information sources, a directory of global climate change organizations, and other materials.

- Aug. 1991 NAL cooperates with the U.S. Environmental Protection Agency (EPA) and the Extension Service to develop a comprehensive bibliography for use in pesticide applicator training (PAT); the program produces 2 products: PEST (Pesticide Education, Safety, and Training), a hypermedia database, and Pesticide Applicator Training Materials: A Bibliography.
- Sep. 1991 NAL demonstrates Plant It! CD: A Multimedia CD-ROM on Ornamental Horticulture at the IAALD Symposium at NAL.
- Sep. 1991 NAL publishes A Preservation Plan for the National Agricultural Library, an outgrowth and report of the NAL preservation study begun in 1989.
- Oct. 1991 NAL and the NATDP announce the availability of the Food Irradiation CD-ROM.
- 1992 NAL in cooperation with the University of Florida Institute for Food and Agricultural Sciences and the Michigan State University Cooperative Extension Service releases the Plant It! CD, covering nearly 1,000 plants.
- 1992 NAL and the NATDP release the CD-ROM containing the Agronomy Journal, Volumes 1-16, 1907-1924, produced with the assistance of the American Society of Agronomy.
- Nov. 1992 NAL and NATDP issue the final report of the NATDP pilot-project produced by Iowa State University to a limited audience.
- Dec. 1992 NAL launches an electronic information initiative to research, plan, and implement a systematic program of managing data in electronic form.
- Jan. 1993 NAL establishes RDDS-L, a listserv for the Regional Document Delivery System, maintained at Mann Library, Cornell University.
- 1993 NAL and NATDP have created a multi-media database containing full text, images, and sound which resides on a NeXT workstation. Using InfoStation software developed by VTLS, the database is linked to ISIS to provide users access to full text, images, and sound enhancements of publications for which the bibliographic information is in ISIS.
- 1993 NAL and NATDP complete and distribute the George Washington Carver Papers CD-ROM containing microfilm reels 1, 2, and 48 of a 67-reel set on Dr. Carver from Tuskegee University, along with the full text of the Guide to the Microfilm Edition.
- 1993 NAL and NATDP complete and distribute the revised version of the Food Irradiation 1 CD-ROM with page images in a standard format, enhanced bibliographic records, 94 non-copyrighted publications (over 51,000 pages) as the first part of a large collection donated to NAL that will be placed on CD-ROM over the next 2 years.
- Fall 1993 NAL and NATDP announce the availability of the final report of the NATDP pilot project issued with limited distribution in November 1992.

- Nov. 1993 NAL's Electronic Initiative Steering Committee completes its report Phase I Final Report, The Electronic Information Initiative: A Key Success Factor in the NAL Strategic Plan; Phase I consisted of an examination of the issues associated with the library's ability to manage electronically created and stored information; subcommittees were charged with providing recommendations for changing policies and procedures related to the acquisition, processing, access, dissemination, collection maintenance, and preservation of electronic journals, media, databases, and others.
- 1993 NAL and NATDP announce and distribute the Aquaculture II CD-ROM, also called "Aqua2."
- Feb. 1994 NAL announces that beginning January 1, 1995, electronic information becomes the preferred medium for library materials and services, a goal set in the Library's just-completed Electronic Information Initiative, Phase I, part of its strategic planning.
- 1994 NAL makes the Plant Genome Database of USDA available over the Internet; it contains data for important crop species including maize, soybean, small grains (wheat, barley, oats), rice, and tomato, and for Arabidopsis, an organism that has served as a model for plant genetic research; gopher and FTP forms of the database are also accessible.
- 1994 NAL and the NATDP in cooperation with the American Society of Agronomy publish the 2nd CD-ROM in the series: Agronomy Journal, Volumes 17-22 (1925-1930).
- 1994 NAL makes available a sample database of global change information over the Internet; it is a pilot project of the Global Change Data and Information System by the USGCRP.
- Dec. 1995 NAL in collaboration with several land-grant universities and USDA/REE agencies establishes a pilot AgNIC Home Page on the Internet.
- 1996 NAL and NATDP make available Food Irradiation 2, a CD-ROM containing 11,000 pages of government research from the 1950s and 60s.
- 1996 NAL joins with 30 other ARL libraries in the Latin Americanist Research Resources Pilot Project and is participating in the serials portion of the pilot project by agreeing to maintain subscription responsibility for selected serials, providing contents information for the serials to the University of Texas Latin American Network Information Center (UT-LANIC) database, and expediting document delivery for this material at no cost to project participants.
- 1996 NAL and 9 land-grant libraries join in the first phase of the USAIN National Preservation Program for Agricultural Literature; the first phase, funded by an \$850,000 grant from the National Endowment for the Humanities, will identify and preserve historical literature about agricultural development and rural life covering 1820 to 1945.
- 1996 NAL announces that AgNIC now includes a directory entitled: Directories of Experts in Agriculture which includes hypertext links to 21 directories.
- Sep. 1996 NAL discontinues its electronic bulletin board system, ALF, on September 30, as it was overtaken by events.

- 1996 NAL puts the Data Base of the Occurrence and Distribution of Pesticides in Chesapeake Bay on the AgNIC web site. It joins the following 5 components of the web site: AgDB; AGRICOLA Subject Category Codes; Agricultural Conferences, Meetings, Seminars Calendar; Directories of Experts in Agriculture; and the Online Reference Service Pilot Project.
- 1997 NAL's Animal Welfare Information Center and the U.S. Department of Health and Human Services produce the Compendium of Animal RESources (CARE) CD-ROM, containing more than 160 documents related to animal care and use. The CD-ROM is prepared through and for sale by the Government Printing Office.
- 1997 NAL develops its Electronic Media Center (EMC) from prior software and technology demonstration centers, expanding the number of resources and databases available to users in the Library in Beltsville, the DC Reference Center, and to ARS staff on their desktop computers.
- 1997 NAL and NATDP release the 3rd CD-ROM in a series: Agronomy Journal Volumes 23-28 (1931-1936); and the 1st CD-ROM in a series: American Journal of Agricultural Economics.
- 1998 NAL expands electronic document delivery, partly by providing Ariel software and technical support to over 20 USDA regional offices and the libraries of the 1890 Land-Grant Universities and Tuskegee University.
- July 1998 NAL begins to move its collection of microform masters, including those of the land-grant cooperative microfilming projects for which NAL is the depository, to the Iron Mountain-National Underground Storage site in Boyers, Pennsylvania, where the storage environment and services meet national preservation standards.
- 1998 NAL completes a draft Preservation Plan.
- Jan. 1999 NAL and the National Institutes of Health (NIH) launch the International Bibliographic Information on Dietary Supplements (IBIDS), Internet site and database, containing over 350,000 citations to scientific literature from 1986 to the present derived from AGRICOLA, AGRIS International, and MEDLINE, on January 6.
- 1999 NAL expands the USDA History Collection web page, in the 3rd year of the project to organize the collection and make it accessible; NAL also began to preserve some of the brittle and deteriorating documents.
- 1999 NAL begins the 2nd phase of its project to establish a national microfilm archive for significant national, state, and local agricultural literature at the Iron Mountain-National Underground Storage site in Boyers, Pennsylvania.
- 1999 NAL's CALS begins to use Current Contents® and to offer to ARS web-based access to Current Contents Connect® in response to recommendations of the ARS-wide Research Information Needs Action Team.
- 2000 NAL completes preservation digitization of the Journal of Agricultural Research.
- Aug. 2000 NAL and the AgNIC Alliance release new system architecture with new searching and thesaurus features.

- 2000 NAL puts into place a new and increased fee structure for document delivery. NAL and NTIS complete a fee-based billing service agreement under which NTIS will process NAL's patron billing.
- Nov. 2000 NAL is selected to participate in the Preservation Environment Monitor Field Trial of the Image Permanence Institute; the program will provide systematic monitoring of environmental conditions in the Library to guide preservation and collection management.

Bibliographic Services Milestones, 1982-2000 National Agricultural Library

- Jan. 1984 NAL begins cooperative indexing program with the Arid Lands Information Center at the University of Arizona, beginning with 90 journal titles (expanded to 180 titles by September 1986).
- 1984 After dropping out of the Cooperative Online Serials (CONSER) project for several years because of lack of funds, NAL resumes its national role in serials processing, rejoining CONSER and joining the Name Authority Cooperation (NACO). Thereby, becoming the Nation's authority for establishing and verifying the names of agricultural organizations appearing in library catalogs, and taking national responsibility for the coordination and quality control of information about current agricultural serials.
- 1984 NAL selects CAB Thesaurus as a controlled vocabulary for agriculture. The CAB Thesaurus terms were included in AGRICOLA indexing records beginning with the January 1985 sale tape.
- 1984 NAL initiates the NAL/Land-Grant University State agricultural publications program through which the land-grant libraries acquire State Agricultural Experiment Station and Extension Service publications, process them, provide copies to NAL, provide full-level cataloging records to NAL, and provide document delivery services from their copies.
- Sep. 1985 NAL links directly with the LC database MUMS (Multiple Use MARC System), NACO (Name Authority Cooperative Project), and CONSER (Conversion of Serials Project) by three Comterm terminals installed in the Cataloging Branch, speeding up and improving accuracy of processing.
- March 1986 NAL's journal evaluation committee, formed in 1985, completes its review of journals indexed by NAL and cooperators, to recommend journals for coverage in AGRICOLA. NAL decides to focus on U.S. publications and publications not indexed elsewhere, and to avoid overlap with AGRIS and other indexing services.
- Sep. 1986 NAL awards a contract to Virginia Tech Library Systems, Inc. to install an integrated library system incorporating the latest computer technology and software in the Library over a 2-year period. The award follows two years of assessing needs, evaluating proposals, and testing potential systems, and carries out Blue Ribbon Panel 1982 recommendations to acquire a turnkey system.

- Jan. 1987 NAL's AGRICOLA database is offered on compact disc by SilverPlatter Information Services in a non-exclusive agreement with the Library; it is first demonstrated at the ALA Midwinter conference in Chicago.
- May 1989 NAL, CAB International (CABI), and the Consultative Group on International Agricultural Research (CGIAR) representatives meet at NAL to discuss and propose the establishment of a Universal Agricultural Thesaurus, merging the best features of AGROVOC and the CAB Thesaurus and others.
- 1992 NAL releases the World List of Agricultural Serials (WLAS) computer database on CD-ROM by SilverPlatter International, Inc.; it contain records for over 56,000 titles and annotations indicating where each title is indexed and other information.
- 1993 NAL is selected to participate in the Library of Congress's national coordinated cataloging program.
- July 1993 NAL celebrates its 3,000,000th AGRICOLA Record on July 12 with a program and reception for NAL staff, USDA and other guests. Associates NAL presented a plaque commemorating the occasion to the Library.
- July 1993 NAL, CABI, the United Nations Food and Agriculture Organization, the German Centre for Documentation and Information in Agriculture (ZADI), and other international organization representatives met in Bonn, Germany, July 15-16, to sign the classification scheme for the Unified Agricultural Thesaurus (UAT).
- Oct. 1994 NAL participates in the InterCat Project of OCLC, a national effort to enhance access to Internet resources by improving bibliographic control of this material.
- Fall 1994 NAL contracts with Library Systems & Services, Inc. (LSSI) for a 5-year retrospective conversion project in which more than 198,000 paper-based catalog records will be converted into machine-readable form.
- 1998 NAL completes the 5-year project of retrospective conversion of paper-based catalog records for monographs; NAL will retain the pre-1965 card catalog, which is moved to the stacks in preparation for renovation of the 1st Floor in October.
- 2000 NAL creates a journal evaluation panel to review journals to be indexed in accordance with revised criteria; it will meet 3 to 4 times per year.
- June 1999 NAL receives the Oberly Award for Bibliography in the Agricultural Sciences "for continuous and improved publication of AGRICOLA, the leading bibliographic source for agriculture."

Collection Development Milestones, 1982-2000
National Agricultural Library

- 1984 NAL initiates the NAL/Land-Grant University State Agricultural Publications Program through which the land-grant libraries acquire state agricultural, experiment station, and extension service publications, process them, provide copies to NAL, provide full-level cataloging records to NAL, and provide document delivery services from their copies. (AGRICOLA)
- 1984-1985 NAL and the National Library of Medicine (NLM) agree on veterinary science collection responsibilities of the two libraries.
- Feb. 1986 NAL revises its collection development policy to incorporate the acquisition of machine-readable data files and microcomputer software for agriculturally-related subjects, including general purpose software with agricultural applications. This new policy is based on a year of experience in which FNIC gained recognition as a national center for food and nutrition microcomputer software.
- 1987 NAL and the National Library of Medicine (NLM) publish a cooperative collection development agreement in the area of human nutrition and related subjects, including collection levels for each institution in 26 subcategories.
- 1988 NAL begins a systematic multi-year effort to verify the status of all exchange arrangements which had increased to over 8,000 during the previous decade. NAL has always depended upon a very active program of gifts and exchanges to augment the collection and ensure that difficult-to-acquire publications from international sources were secured for the national collection.
- Sep. 1988 NAL publishes a complete revision of its collection development policy which defined the scope and coverage of agricultural subjects in the national collection in terms of the Library of Congress (LC) subject classification. The policy has been updated through issuance of addenda with new guidelines for collecting CD-ROMs, computer software, and Internet resources.
- Dec. 1988 NAL and NLM meet to develop cooperation in the area of biotechnology.
- Oct. 1989 NAL, NLM, and LC issue their Biotechnology: Joint Collection Development Policy Statement.
- 1996 NAL, NLM, and LC complete an update of the joint collection development policy for coverage of veterinary science and related subjects; NAL publishes the complete statement and related collection development materials on its Web site.
- 1998 NAL publishes a complete revision of its collection development policy defining the scope and coverage of agricultural subjects in the national collection. The policy has been updated through issuance of addenda with new guidelines for collecting CD-ROMS, computer software, and Internet resources.

Information Technology Milestones, 1982-2000
National Agricultural Library

- June 1986 NAL completes a 5-month investigation of the use of telefacsimile equipment for document delivery. The evaluation study was funded by USDA, with contributions in kind by the 13 participating libraries that included 5 ARS regional research center libraries, 7 Land-grant University libraries, and NAL. As a result NAL will accept requests by telefacsimile, but mail requested materials unless the requestor requests telefacsimile as a rush response.
- Sep. 1986 NAL awards a contract to Virginia Tech Library Systems, Inc. to install an integrated library system incorporating the latest computer technology and software in the Library over a 2-year period. The award follows two years of assessing needs, evaluating proposals, and testing potential systems, and carries out Blue Ribbon Panel 1982 recommendations to acquire a turnkey system. It includes modules to perform online reference and catalog retrieval, online cataloging and catalog maintenance, serials control, online acquisitions processing, online lending control, and preservation control. NAL has contracted for the development of a module to support its indexing responsibility.
- Nov. 1986 NAL demonstrates its prototype "expert system" on aquaculture at NAL Day II.
- Nov. 1988 NAL holds a 2-day conference on The Application of Scanning Methodologies in Libraries as a forum for disseminating information on state-of-the-art scanning technology and its uses in the library and information field. Conference features more than a dozen speakers from institutions around the U.S.
- May 1989 NAL and North Carolina State University Libraries enter a cooperative agreement to test the technical feasibility and administrative structures necessary to capture, transmit, and receive machine-readable text at remote sites through the national electronic network.
- Nov. 1990 NAL discontinues activities related to the Feed Composition Data Bank.
- Nov. 1990 NAL participates in the inaugural USAIN National Conference, The Future of Agricultural Information, November 7-9, at the University of Illinois at Urbana-Champaign; speakers at the 3-day meeting, including several from NAL, covered a variety of topics related to agricultural information and technology applications.
- Jan. 1991 NAL completes the OCR study begun in March 1986, Optical Character Recognition by Hand-held Device, in Lieu of Keyboarding Data for Indexing and Cataloging Records, and publishes the findings.
- 1992 NAL announces that Windows Personal Librarian, developed by Personal Library Software, Inc., of Rockville, MD, has been chosen as the retrieval software for the National Agricultural Text Digitizing Project (NATDP); NAL, 45 land-grant libraries, and the Cargill Information Center participated in the pilot text-digitizing program that began in 1987; the NATDP became fully operational in 1991.
- May 1994 NAL receives AGRICOLA Across the Internet-User Needs, the report of the study of user considerations for NAL in planning to provide AGRICOLA access over the Internet, by Beth A. Sandore, Assistant Automated Services Librarian at the University of Illinois Library at Urbana-Champaign, who was a Visiting Scholar at NAL.
- 1994 NAL installs a satellite downlink system and a satellite dish; a primary expected use will be for mandated Federal personnel training.

- 1994 NAL's electronic bulletin board, ALF, is now accessible from the Internet; NAL begins to include Agricultural Calendar listings on ALF.
- Fall 1994 NAL inaugurates its "Gopher" which now gives access to NAL resources and services through the Internet.
- Dec. 1994 NAL meets with representatives of land-grant libraries and USDA agencies to further development of AgNIC, the Agricultural Network Information Center.
- April 1995 NAL's World Wide Web server is officially online April 19, making the NAL Home Page available to the world via the Internet; most of the Library's branches and information centers create establish their own Web pages at the NAL site.
- June 1995 NAL's WWW Home Page Prototype Committee issues its Final Report on June 9, containing recommendations for maintaining and improving NAL's Web site.
- March 1996 NAL's makes ISIS (the online public access catalog and journal article citation database) available on its Web site.
- Sep. 1996 NAL and participating libraries provide online reference services through AgNIC on the Internet in a pilot project through May 1997; subjects included are: animal and plant sciences; food and nutrition; rangeland management; rural information; and USDA agricultural economic research and statistics.
- March 1997 NAL, USDA agencies, and invited experts from government and academic institutions hold a 2-day meeting, USDA Digital Publications: Creating a Preservation Action Plan, March 3-4.
- 1997 NAL establishes initial procedures and standards for digital conversion of USDA embrittled-paper publications, and digitized 19 volumes of the Journal of Agricultural Research among others; NAL is placing these materials on the WWW.
- Dec. 1997 NAL discontinues its Gopher, December 19.

Abraham Lincoln Building Milestones, 1982-2000 National Agricultural Library

- Oct. 1985 NAL begins shifting about 87% of its 1.8 million-volume collection in the library stacks in anticipation of integration of the 250,000-volume D.C. Branch collection of economics and social sciences materials related to agriculture. The rare book cage, oversized materials, and other non-book and non-periodical collections are moved to the 13th Floor and consolidated areas on other floors.
- June 1986 NAL moves the D.C. Branch stack materials to space made for them in the Beltsville stacks, including the area of compact shelving, June-September. The last box is unpacked and materials shelved Nov. 25.
- 1991 Space and Facility Condition Studies completed--Identified space usage, building and functional deficiencies totaling \$16 million.

- 1995-1999 Various infrastructure projects and 14th floor renovation completed.
- 1998 NAL establishes a core group to plan and implement 1st Floor renovation.
- 1999 1st Floor renovation completed.
- April 2000 Grand re-opening and dedication of 1st floor--Ceremony held with Secretary of Agriculture Dan Glickman, Deputy Secretary Richard Rominger, ARS Administrator Floyd Horn, and others attending.
- June 2000 NAL's energy savings performance contract begins with the lighting upgrade in the stacks, replacing lights, timers, and other switches, June to July; work to convert the boilers to dual-fuel takes place June to August; work on the chillers and multi-zone air handlers to make them more efficient, June to October.
- June 2000 NAL building named the Abraham Lincoln Building, with Senator Richard J. Durbin of Illinois, Secretary of Agriculture Dan Glickman, Deputy Secretary Richard Rominger, ARS Administrator Floyd Horn, and Astronaut Kent Rominger as speakers at the ceremony and reception.
- Sep. 2000 NAL awards a design contract for renovation of the 5th Floor to convert it from offices to a special collections stack area.
- 2001 Design of 5th floor renovation completed.

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Appendix D

USDA BLUE RIBBON PANEL ON NATIONAL AGRICULTURAL LIBRARY
 NAL REVIEW & PLANNING AGENDA
 PROPOSED QUESTIONS FOR PANEL'S LONG RANGE PLANNING
 [with Panel member assignments as of October 26, 2000]

- A) Vision of NAL in 2020?
 COMPELLING VISION OF THE FUTURE OF NAL IN THE YEAR 2020-
 What NAL WILL BE: What NAL WILL DO, HAVE DONE
 full group participation
- A) SUCCINCT NEW NAL MISSION STATEMENT FOCUS = ONE SENTENCE
 full group participation
- B) POLYOCULAR SITUATION ANALYSIS - CUSTOMER + PEER + STAFF SURVEYS
- B) OBJECTIVE PROGRESS ASSESSMENT - KEY ACHIEVEMENTS OF 1990s
 Barbara Hutchinson, Jay Hirschman, Paula Kaufman, Winston Tabb, Martin Apple
- C) CANDID ANALYSIS OF CURRENT NAL STRENGTHS
- C) CANDID ANALYSIS OF CURRENT NAL WEAKNESSES
- C) DEFINITION OF NAL'S ADVANTAGES OVER ANY ALTERNATIVES
 Barbara Hutchinson, Jay Hirschman, Paula Kaufman, Winston Tabb, Martin Apple
- D) CHALLENGES & FUTURE THREATS TO NAL OR ITS LEADERSHIP
- D) NAL LEADERSHIP OPPORTUNITIES NEXT 20 YEARS e.g.: 24/7 AUTOMATION
- D) DEFINING WHOM WE MUST SATISFY - WHO THEY ARE NOW & WHAT THEY VALUE NOW,
 WHO THEY MAY BE & WHAT THEY MAY NEED AND VALUE IN 20 YEARS
 Philip Hudson, Austin Hoover, Martin Apple, Robert Willard
- E) REVISITING MISSION SETTING 21ST CENTURY PRIORITIES, GOALS
 SET NEW 5 & 10 YEAR MEASURABLE GOALS (e.g. 99% CUSTOMERS RECEIVE RIGHT
 INFO SAME DAY)
 full group participation
- F) FIVE BEST OPTIONS FOR NAL FUTURE STRATEGY - LEVERAGE FOCUS, ETC
- F) THE MOST IMPORTANT NAL STRATEGY - BEST FOCUS/PATH OF OUR RESOURCES
- F) KEY OPERATING PARAMETERS TO ENSURE SUCCESS

WHO MAKES WHAT DECISIONS? WHO IS ACCOUNTABLE FOR WHAT RESULTS? ETC
full group participation

G) WHAT SHOULD BE OUR NEW, OPTIMIZED 21ST CENTURY ORGANIZATIONAL STRUCTURE?
MATRIX? PROFESSIONAL BUREAUCRACY? ETC
full group participation

H) WHO, HOW AND WHEN WILL WE [NAL] MONITOR & REPORT RESULTS?
H) HOW WE [NAL] WILL MEASURE, BE ACCOUNTABLE FOR OUR [NAL] RESULTS?
William Delauder, Jane Coulter, Pearlie Reed

I) HOW WILL WE [NAL] ENSURE ADEQUATE RESOURCES EACH YR?
WHAT PROCESSES WILL REGULARLY ENSURE NAL RECEIVES NEEDED GROWTH
RESOURCES?
Larry Vanderhoef, Margrit Krewson, William Delauder, Pam André

I) WHEN AND HOW WILL WE [NAL] REVISE COURSE AS NEEDED TO ADAPT
TO NEW CUSTOMERS, NEW NEEDS, AND NEW TECHNOLOGY?
William Delauder, Jane Coulter, Pearlie Reed, Pam André

CONCLUSIONS BY THE FINAL MEETING OF PANEL
WE SHOULD REACH AGREEMENT* ON WHY NAL MUST EXIST
WHERE NAL IS GOING, AND HOW NAL WILL GET THERE

*AGREEMENT=3/4 OF US AGREE

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National Agricultural Library Assessment Report

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Appendix E

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TITLE 7--AGRICULTURE

CHAPTER 64 AGRICULTURAL RESEARCH, EXTENSION, AND TEACHING

SUBCHAPTER II--COORDINATION AND PLANNING OF AGRICULTURAL RESEARCH,
EXTENSION, AND TEACHING

§ 3125a. National Agricultural Library

- a. Purpose. The purpose of this section is to consolidate and expand the statutory authority for the operation of the library of the Department of Agriculture established pursuant to section 2201 of this title as the primary agricultural information resource of the United States.
- b. Establishment. There is established in the Department of Agriculture the National Agricultural Library to serve as the primary agricultural information resource of the United States.
- c. Director. The Secretary shall appoint a Director for the National Agricultural Library who shall be subject to the direction of the Secretary.
- d. Functions of Director

The Director may--

- 1. acquire, preserve, and manage information and information products and services in all phases of agriculture and allied sciences;
- 2. organize agricultural information and information products and services by cataloging, indexing, bibliographical listing, and other appropriate techniques;
- 3. provide agricultural information and information products and services to agencies of the

Department of Agriculture and the Federal Government, public and private organizations, and individuals, within the United States and internationally;

4. plan for, coordinate, and evaluate information and library needs related to agricultural research and education;
5. cooperate with and coordinate efforts among agricultural college and university libraries, in conjunction with private industry and other agricultural library and information centers, toward the development of a comprehensive agricultural library and information network; and
6. coordinate the development of specialized subject information services among the agricultural and library information communities.

e. Library products and services

The Director may--

1. make copies of the bibliographies prepared by the National Agricultural Library;
2. make microforms and other reproductions of books and other library materials in the Department;
3. provide any other library and information products and services; and
4. sell those products and services at such prices (not less than the estimated total cost of disseminating the products and services) as the Secretary may determine appropriate.

f. Receipts. Funds received from sales under subsection (e) of this section shall be deposited in the Treasury of the United States to the credit of the applicable appropriation and shall remain available until expended.

g. Agreements.

1. In general. The Director may enter into agreement with, and receive funds from any State, and other political subdivision, organization, business, or individual for the purpose of conducting activities to carry out this section.
2. Funds. Funds received under this subsection for payments for library products and services or other activities shall be deposited to the miscellaneous contributed fund account, and shall remain available until expended.

h. Authorization of appropriations. There are authorized to be appropriated for each fiscal year such sums as may be necessary to carry out this section.

(Pub. L. 95-113, title XIV, Sec. 1410A, as added Pub. L. 101-624, title XVI, Sec. 1606(a), Nov. 28, 1990, 104 Stat. 3714.)

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[CITE: 7USC3125b]

TITLE 7--AGRICULTURE

CHAPTER 64--AGRICULTURAL RESEARCH, EXTENSION, AND TEACHING

SUBCHAPTER II--COORDINATION AND PLANNING OF AGRICULTURAL RESEARCH, EXTENSION, AND TEACHING

§ 3125b. National Rural Information Center Clearinghouse

- a. Establishment. The Secretary shall establish, within the National Agricultural Library, in coordination with the Extension Service, a National Rural Information Center Clearinghouse (in this section referred to as the ``Clearinghouse") to perform the functions specified in subsection (b) of this section.
- b. Functions. The Clearinghouse shall provide and distribute information and data to any industry, organization, or Federal, State, or local government entity, on request, about programs and services provided by Federal, State, and local agencies and private nonprofit organizations and institutions under which individuals residing in, or organizations and State and local government entities operating in, a rural area may be eligible for any kind of assistance, including job training, education, health care, and economic development assistance, and emotional and financial counseling. To the extent possible, the National Agricultural Library shall use telecommunications technology to disseminate information to rural areas.
- c. Federal agencies. On request of the Secretary, the head of a Federal agency shall provide to the Clearinghouse such information as the Secretary may request to enable the Clearinghouse to carry out subsection (b) of this section.
- d. State and local agencies and nonprofit organizations. The Secretary shall request State and local governments and private nonprofit organizations and institutions to provide to the Clearinghouse such information as such agencies and organizations may have about any program or service of such agencies, organizations, and institutions under which individuals residing in a rural area may be eligible for any kind of assistance, including job training, educational, health care, and economic development assistance, and emotional and financial counseling.
- e. Limitation on authorization of appropriations. To carry out this section, there are authorized to be appropriated \$500,000 for each of the fiscal years 1991 through 2002.

(Pub. L. 101-624, title XXIII, Sec. 2381, Nov. 28, 1990, 104 Stat. 4049; Pub. L. 104-127, title VIII, Sec. 842, Apr. 4, 1996, 110 Stat. 1170; Pub. L. 105-185, title III, Sec. 301(b)(3), June 23, 1998, 112 Stat. 563.)

Codification

Section was enacted as part of the Rural Economic Development Act of 1990, and also as part of the Food, Agriculture, Conservation, and Trade Act of 1990, and not as part of the National Agricultural Research, Extension, and Teaching Policy Act of 1977 which comprises this chapter.

Amendments

1998--Subsec. (e). Pub. L. 105-185 substituted ``2002" for ``1997".

1996--Subsec. (e). Pub. L. 104-127 substituted ``1997" for ``1995".

Section Referred to in Other Sections

This section is referred to in section 917 of this title.

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Appendix F

USDA BLUE RIBBON PANEL FOR ASSESSMENT OF THE NATIONAL AGRICULTURAL LIBRARY

Draft Report from the Committee for Items B and C
April 6, 2001

"The NAL should be refurbished so it once again becomes the world preeminent agricultural library. This entails subscribing to more journals, forging greater cooperation with the land-grant universities, having more service personnel to serve the nations science community, and making greater and greater amounts of holdings and assets (databases) more friendly to remote access. It appears to be under-funded..."

[Quote from survey respondent]

I. Highlights of NAL Achievements in 1980s and 1990s (for possible use in section 2, Progress since 1982)

The 1982 Panel, while concluding that NAL is a major national resource which must be preserved, made a number of recommendations for improvement. Appendix B provides a complete list of those recommendations and the response to them made by NAL administration and staff. In addition, Appendix C provides a comprehensive list of NAL milestones since 1982 organized into categories: (1) legislative and administrative, (2) collection building, (3) agricultural information access, (4) bibliographic services, (5) collection development, (6) information technology, and (7) Abraham Lincoln Building. The following highlights some of the more significant achievements taken from these two documents and from a partial list compiled by members of a Panel committee.

Administratively, NAL revised its mission, values, and vision statements in 1994 as part of an ongoing strategic planning process. It has made concerted and valiant efforts to heighten its visibility through brochures, tours, exhibits, videotapes, and journal articles, and has made numerous attempts to establish an Advisory Council to assist with long-range planning and policy formulation. Reorganizations and staffing adjustments were made to streamline services and to better delineate USDA and national library functions. In addition, diverse funding options have been initiated through increases in user fees, leasing arrangements, and the use of contractors for certain activities.

NAL has also worked to develop its collection and resources both in terms of fulfilling its promise as a national library for the entire agriculture community and as a specific resource for USDA's programs and agencies. This has included the acquisition of significant special collections in a variety of formats, such as materials on agent orange and historical USDA documents and multimedia. In addition, NAL has

coordinated with NLM and LC on collection development policies for related areas, leading to a 1996 joint collection development policy for veterinary science and related subjects. NAL also joined several national cataloging programs and became an authority for establishing and verifying the names of agricultural organizations.

Another of the 1982 recommendations specified a more active role for NAL in international information activities. This led to close involvement with the International Association of Agricultural Information Specialists (IAALD), the Consultative Group for International Agricultural Research (CGIAR), and the U.N. Food and Agriculture Organization (FAO) and its AGRIS database, on matters of coordination and cooperation. NAL also sponsored and participated in a series of U.S./Central European Agricultural Library Roundtables, and recently signed an agreement with the Biblioteca Central Magna of the Autonomous University of Nuevo Leon, Mexico, to enhance access to agricultural and related information.

Previous recommendations also focused on the need for a national agricultural information network for resource sharing, timely processing of information, and equality of access. This resulted in NAL and representatives from land-grant university libraries forming the United States Agricultural Information Network (USAIN) in 1988. Through USAIN, NAL joined with other land-grant libraries in a National Preservation Program for Agricultural Literature funded by grants from the National Endowment for the Humanities. NAL also has cooperated with NASULGC to advance support of agriculture libraries. Drawing on these collaborative efforts was the 1995 establishment of another NAL and land-grant collaboration, the Agriculture Network Information Center (AgNIC). Although not yet fully realized, the AgNIC initiative is a discipline-specific, distributed network on the Internet envisioned ultimately as a gateway to centers of excellence in agricultural information. It currently offers 28 subject-specific sites on the World Wide Web.

A significant technology achievement was the National Agricultural Text Digitizing Project (NATDP) which resulted in the production of a series of widely distributed CD-ROM products for agricultural research (aquaculture, acid rain, agent orange, food irradiation, and the Agronomy Journal). NAL also has been active in developing multimedia resources, and has made databases, directories, and other resources available over the Internet. In addition, NAL has developed specialized web-based Information Centers which provide in-depth resources and reference services on such subjects as: alternative farming systems, animal welfare, food and nutrition, food safety, rural information, technology transfer, water quality.

II. Polyocular Perspectives

A. Customer and Staff Survey Methods (for Section 4, Methods)

Under the auspices of the U.S. Agricultural Information Network (USAIN) and in support of the Panel's program review efforts, a customer service survey was conducted in December 2000 and the first part of January 2001. This survey was an attempt to touch the pulse of the NAL's present and future customers to gain input on its current programs and services and to help in determining future directions. Five questionnaires were developed and distributed to USDA personnel through a variety of NAL customer listservs and to other related scientists affiliated with the Council of Scientific Society Presidents. In addition, agriculture and veterinary science librarians were sent questionnaires through their respective listservs, as were library directors at land-grant universities. Extension personnel were contacted by way of a Cooperative Extension Service (CES) Directors listserv and through a CES State Specialist listserv. Questionnaires also were distributed to NAL on-site users at both the Beltsville and D.C. locations. Finally, NAL staff members were surveyed.

The total number of returned questionnaires was 739, with an additional 53 from NAL staff members. An analysis of the general survey responses and those of the NAL staff are included in Section 5 of this report.

B. Summary of NAL Customer Survey Results (for use in Section 5, Findings)

Questions in the survey were open-ended, giving respondents the opportunity to describe information gathering activities in their own words. As a result, answers had to be reviewed carefully to identify similar elements that could be categorized and quantified for analysis. Overall, the general survey, largely of USDA employees, reveals a widespread use of electronic services for finding information. In response to the question of where information is most often obtained, 28 percent identified the World Wide Web, 25 percent noted either NAL or AGRICOLA, and another 23 percent specified university, agency, or other libraries. What we do not know from these responses is whether users went to the web or other libraries to search AGRICOLA or to use other NAL online services. This suggests there is some probability that the actual number for AGRICOLA use could be much higher than first noted. In this regard, the most used NAL service was identified by 26 percent as AGRICOLA, closely followed at 24 percent by document delivery; whereas, the most critical service was considered to be document delivery at 25 percent, and AGRICOLA at 14 percent. However, if all electronic-related access points were combined with the AGRICOLA percentage, such as NAL web sites, AgNIC, and CALS, the overall number for electronic access would be much greater than any other service, including document delivery. What seems clear from the survey is that while AGRICOLA is by far the most used and visible electronic service, on a regular basis customers do use many other NAL services from document delivery to the various NAL web sites. This suggests a need to continue to develop and maintain a variety of delivery systems and customer services if NAL is to meet the full range of its users information needs.

Looking into the future, the survey asked for a description of the types of information services they would like to have in 2010. In this the respondents were in the most agreement: nearly 75 percent responded with examples of electronic services such as online journals and journal articles, and specialized and linked databases with expanded search capabilities. Others mentioned faster services in general, followed by those who wanted to see broader and deeper development of collections. Similar response results were given to the question about what new or improved NAL service would be desirable. Greater electronic access to information and resources, particularly online journals and improved databases, was listed by 65 percent of the respondents, with another 16 percent requesting broad collection development activities. Responses to the question about what other library or library system is useful to them provides insights into potential models for future developments. The National Library of Medicine, and particularly PubMed and Medline, was most often mentioned by respondents as the system to emulate. The following quotes illustrate user interests:

Visions of the future: "A fully integrated linkage to every major university library system worldwide so that resources can be downloaded or sent electronically to where they are needed"...."a perfect information gathering world would be...to find relevant citations on any topic by searching in one mega-database"... "upgrade AGRICOLA...[with]...abstracts for more entries, sources of documents clearly indicated, and back it up with a service that leads the users more reliably to the indexed information"... "impeccable indexing and online links to government publications – what more could we ask?" and finally a prophetic statement for the AgNIC system:

"If NAL wants to provide national agricultural information services by 2010, certainly they need to go to 'the people' to find out what information they are seeking. Then NAL must create or compile

content, not just indexing...I find our users, faculty and students... [and] the general public, increasingly less willing to wade through pieces of the puzzle. They want 'packages': mosquito eradication in wetlands or farm ponds...can NAL become a provider of information packages related to agriculture instead of 'just' indexing? Can it become a gateway to information being churned out by its own as well as other agencies?"

C. Summary of NAL Staff Survey

The 53 NAL staff members who responded to the survey were employed in either public service, information systems development, or library administration. A majority of the respondents considered a knowledgeable and dedicated staff as a major strength of NAL. This was followed by a nearly even split between collections and electronic access points, such as AGRICOLA. Weaknesses were largely grouped around management issues, budget problems, and outdated databases. Critical services were identified as reference services, access to electronic services (web AGRICOLA, AgNIC, and NAL's web site), and document delivery. Suggestions for improvements included a variety of electronic services beginning with both content and web accessibility enhancements of AGRICOLA, and followed by various types of web site development. The greatest barrier was seen as budget deficiencies, followed by staff shortages and a lack of strong leadership. Of particular importance here are staff responses in the area of service development as they correspond closely with those outlined by respondents to the survey, suggesting a shared vision for future services.

D. Summary of Library Directors Survey Response

Library directors also mirrored many of the responses made by general NAL users and NAL staff members. They saw the strengths of NAL as primarily its collections, including historical archiving, but also noted online services, including AGRICOLA and AgNIC. The main weakness was seen as the lack of adequate funding for its key functions, a similar lack of visibility, poor placement in USDA, and a location outside the power corridor. All of the library directors were familiar with or had used the AGRICOLA database. In addition, the NAL web site was widely known, as was the document delivery service, NAL's historical collections, AgNIC, and the online reference service. Similarly, the most important NAL service was identified as either AGRICOLA specifically or other databases that provide access to all important agricultural information. This was followed by those who identified preservation activities and access to hard-to-get materials, and those who listed document delivery as the most important service.

Of the nine library directors who responded to the question asking for suggestions for new and improved services, the majority focused on greater digital access to information, full-text, document delivery, and AGRICOLA links. Also, similar to many of the customers surveyed, there was an interest in expanding the subjects covered by NAL. This line of thinking was consistent in the responses to the question on how information services were envisioned for the year 2010. Many offered ideas for providing digital access to all types of information, particularly full-text materials. Included were suggestions to greatly expand and upgrade AGRICOLA and AgNIC. Other suggestions were to build NAL's coverage in related fields such as the environment, to improve visibility, and to expand reference services. One revealing quote outlined "a perfect information gathering world from the client's perspective...: 1) to find relevant citations on any topic by searching in one mega database; 2) the citation/abstract links directly to the article or book cited; and 3) if the book or article has interesting references or footnotes, they link directly to the items cited."

E. Summary of USAIN AGRICOLA Survey

The U.S. Agricultural Information Network (USAIN) AGRICOLA Interest Group conducted a survey of AGRICOLA users in February 1999. Most survey respondents rated AGRICOLA generally an excellent to very good database. Based on the feedback received, the Interest Group suggested NAL provides an extremely important function by producing AGRICOLA and wanted to see an even greater commitment of staff and resources to it. Areas identified for emphasis in the survey and through AGRICOLA Interest Group discussions were to: (1) include abstracts in as many records as possible; (2) include indexing for as many book chapters as possible; (3) index all USDA publications including regional publications which are sometimes missed; (4) facilitate the inclusion of state experiment station and extension publications; (5) give special consideration to the importance of timeliness in indexing all materials; and, (6) improve the interface and searching capabilities of the free internet version of AGRICOLA.

F. Overall Impressions from Survey Results

The results of these surveys make a strong case for the continuation of NAL's role not only as a library service for USDA personnel, but as the centerpiece of a dynamic national agricultural information system. This system would draw on innovative technologies to directly link users to quality content (abstracts, full-text, data, and information packages) in all areas related to the sustainable management of natural resources in the support of agricultural production. Included would be a complementary mix of services including a greatly enhanced AGRICOLA database, a series of comprehensive and topical web sites, 24/7 document delivery, and all interconnected through a powerful search interface providing users with the closest approximation possible to a "one-stop-shopping" reality. Responses from NAL staff members demonstrate they understand these customer needs and have the same interest in providing the high-quality services necessary to meet those needs. What is lacking are the human and financial resources, and the explicit support of USDA, to do so.

III. Analysis of NAL Strengths and Weaknesses as Identified by Survey Respondents and Panel Members (for use in Section 5, Findings)

The responses to the customer service survey questions regarding NAL strengths and weaknesses were similar to the impressions gained by Panel members through this review process (See also Appendix ???). Major areas of strength include extensive and unique collections, the AGRICOLA database, and dedicated staff members. Specifically, NAL has the largest collection of agricultural information in the world, numbering more than 3.5 million items and including 20,000 journal titles. The AGRICOLA database now includes more than 3.6 million records and is available free-of-charge via the World Wide Web. NAL staff members actively participate in national preservation activities for both print and digital resources, and have taken the leadership in developing specialized information services such as the various web-based information centers, and the collaborative AgNIC initiative. A technology plan was developed in 2000 to plot a strategy for enhancing information technology and information management directions, and a group of staff members are currently in the process of developing a visionary plan for using state-of-the-art technologies to provide users with exactly what they want when they want it.

However, there also were similarities in responses identifying perceived weaknesses. AGRICOLA was at the top of both lists due to problems with timeliness, difficulties with the web interface, lack of abstracts, and a need for broader content coverage. Both Panel members and users suggested NAL has not kept up with new information technologies or with new directions in scientific research in terms of both collection development and electronic access to such information. A lack of awareness of NAL services and a need for greater publicity in general were mentioned by current NAL customers, while Panel members also saw a need for greater overall visibility and for more effective collaborations within the

research library community. Whereas both NAL users and Panel members agree that NAL offers valuable services, Panel members identified more organizational weaknesses (lack of funds, advocacy groups, and collaborative arrangements), while users understandably focused on weaknesses in products and services (limitations of web accessibility and content, decreasing journal subscriptions, and collection gaps in rapidly growing fields, such as biotechnology).

Panel members also noted the cancellations of hundreds of journal titles, and the staff cutbacks, in spite of increasing demands for greatly expanded services, particularly in the area of electronic access. The lack of funding for new initiatives, and the general lack of external advocacy, vibrant partnerships, or a visionary plan to guide the organization into the frontier of knowledge management, appears to have affected staff morale. Although NAL has accomplished much since 1982, user needs have increased exponentially and concurrently with revolutionary improvements in technology. There is a growing gap between what is possible and the state of NAL programs and services.

IV. NAL's Advantages Over Any Alternatives (possibly add this to discussion section describing leadership issues)

NAL has a definite and defined set of natural constituents and collaborators/partners in this country's agricultural (especially land-grant) libraries and it is well known among these constituent groups for the range of resources and services it offers. Capitalizing on this advantage, NAL should play an aggressive leadership role for this group. One example: develop a realistic, holistic preservation strategy for the nation's agriculture literature, including state agricultural documents, extension documents, and the like -- in all original formats.

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Appendix G

US Agricultural Information Network (USAIN) Customer Service Survey

USAIN is seeking your input to help a USDA Blue Ribbon Panel make recommendations on the future development of the US National Agricultural Library (NAL). This survey is entirely voluntary. You have been suggested as a user or potential future user of the NAL. Your timely response will be greatly appreciated. Your name and e-mail address will not be shared with anyone and will be deleted from our records as soon as the Blue Ribbon Panel completes its report. Please complete this questionnaire and e-mail your response to Barbara Hutchinson at barbarah@ag.arizona.edu by January 15, 2001.

QUESTION FOR ALL RESPONDENTS

1. How many times in the last year did you need to obtain information that was not readily available to you in any area related to agriculture in order to complete a necessary task?
2. Please indicate subject areas in which you have searched for information in the past year: (for example: traditional agriculture, alternative farming systems, animal and veterinary sciences, aquaculture, biotechnology, crops, dietary supplements, food and nutrition, food safety, genomics, invasive species, natural resources and the environment, plant sciences, rural information, social aspects of agriculture, sustainable agriculture, and water quality.)
3. Where do you go to obtain the agricultural information you need? Please give the names of the library, database, Web site, etc.
4. Describe what types of agriculture-related information and reference services and capabilities you would like to see our nation have by the year 2010. Place an asterisk (*) next to those that you would personally use. [Use more space as needed.]
5. Which information services available from any of the other three national libraries (Library of Congress, National Library of Medicine, National Library of Education), or any other library system, do you find most useful for your own needs?

6. What is your job title and profession?

7. Which of the following best describes your frequency of use of NAL services?

___ I have never used NAL [skip to question 13]

___ I have not used NAL in the past 3 years

___ I used NAL less than one time per year over the past 3 years

___ I use NAL 1-10 times a year

___ I use NAL 11-20 times a year

___ I use NAL more than 20 times a year

FOR THOSE WITH AT LEAST SOME EXPERIENCE USING NAL:

8. Specifically which NAL services have you used in the last year? [check all that apply]

___ AGRICOLA

please specify format (Web, CD, etc.)_____

___ Document Delivery

___ NAL Web Site [<http://www.nal.usda.gov/>]

___ Information Center Web Sites (Food and Nutrition, Sustainable Agriculture,
Animal Welfare, Plant Genetics, Technology Transfer, Rural Information)
please specify which one:_____

___ On-site use of NAL collections

___ Historical collections

___ Online reference service

___ AgNIC [<http://www.agnic.org/>]

Other (specify):_____

9. What do you consider the most important or critical service currently provided by NAL?

10. What new or improved service would you like NAL to provide in the future?

11. What do you consider the STRENGTHS of the NAL? List all that come to mind. [Use more space as needed.]

12. What do you consider the WEAKNESSES of the NAL? List all that come to mind. [Use more space as needed.]

13. Please check the box that best describes your place of employment:

- ☐ USDA
- ☐ Other Federal government
- ☐ State government
- ☐ Local government
- ☐ Land grant University or 1890 university/college
- ☐ Other university or college
- ☐ Private industry
- ☐ Non-profit organization
- ☐ Professional association

THANK YOU FOR YOUR HELP – YOUR INPUT IS MUCH APPRECIATED!

#####

PLEASE E-MAIL YOUR RESPONSE TO :

Barbara Hutchinson, Director,
Arid Lands Information Center
University of Arizona
E-mail: barbarah@ag.arizona.edu

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Appendix H

Library Operation: NLM and NIH Budget Analysis

Background

The National Library of Medicine began in the early 1800's under the Department of the Army as the Library of the Surgeon General. In the 1930-40's the Library was transferred to the Public Health Service. In 1956 Senators Lister Hill and John F. Kennedy-sponsored legislation to set up a National Library of Medicine (NLM) and a regional health science libraries network. NLM's principal mission is to serve as an archive for biomedical research and to provide broad public access to this literature through the creation of databases. In general NLM does not respond to the needs of individuals.

The NIH Library serves the needs of the researchers and administrators of the National Institutes of Health and is itself a member of the NLM regional health science library network. The NIH campus in Bethesda includes a large hospital for clinical studies. Practicing physicians and researchers at the hospital have critical need for customized information research services not provided by NLM. The NIH Library was established to meet the needs for the hospital as well as the local research community. The NIH Library provides individualized services including assistance in tracking and monitoring grant and contract work. In turn the NIH Library relies on the information products and services provided by NLM such as the MEDLINE database.

The NIH Library until this year was considered and funded through an overhead mechanism. This year the Library is being placed on a cost-recovery basis. Each Institute has been assessed a charge to support basic library operations based upon number of institute staff and historic use for specialized services. In turn the NIH Library this year has been assessed overhead charges and space charges. Until this year the Library provided free-of-charge translation services, document delivery services, and self-service photocopying. Costs for these services are now billed back to the originating Division/Branch. Director, Suzanne Grefsheim indicated that the NIH Library budget has seen increases in the last few years. These increases were used to support the procurement of more electronic resources, supported and requested by the users.

Budget Comparison Between NLM and NIH Library Services

Table 1. Comparison of Operations and Services

	NLM Library	NIH Library

<p>Library Services</p> <p>Note: NLM training primarily for librarians; NIH training primarily for end-user.</p>	<ul style="list-style-type: none"> ● Cataloging ● Preservation ● Reference ● Databases ● Document Delivery ● Extramural Funding ● National Library Network ● Publications ● Training and Outreach 	<ul style="list-style-type: none"> ● Online Searching ● Research Updates ● Translation ● E-mail listserv ● Custom services (journal management, clinical liaison, bibliographic databases, Web pages) ● Training
<p>Hours of Operation</p> <p>(Holiday and seasonal variation in schedules)</p> <p>*Reference assistance until 8:00 pm.</p>	<p>Mon 8:30 am - 5:00 pm</p> <p>Tue 8:30 am - 5:00 pm</p> <p>Wed 8:30 am - 5:00 pm</p> <p>Thu 8:30 am - 9:00 pm*</p> <p>Fri 8:30 am - 5:00 pm</p> <p>Sat 8:30 am - 12:30 pm</p> <p>Sun Closed</p>	<p>Mon - Thu</p> <p>7:45 am - 10:00 pm</p> <p>Fri 7:45 am - 6:00 pm</p> <p>Sat 8:30 am - 6:00 pm</p> <p>Sun 1:00 pm - 5:00 pm</p> <p>Reference (M-F 8:30 - 5:00)</p> <p>Photo Copy Service (M-Th 8 - 8; F 8-6; S 10 - 5; Su 1- 5)</p>
<p>Reference Services</p> <p>in FY 2000</p> <p>*NLM has a single point to process requests, the total includes enquires about products and services.</p>	<p>Total:* 114,427</p> <p>Onsite 51,456</p> <p>Remote 62,871</p> <p>Circulation**</p> <p>Onsite 363,780</p> <p>ILL 390,574</p> <p>**Circulation of Documents and Books</p>	<p>Total: 44,328</p> <p>Information Desk</p> <p>(Reference): 12,617</p> <p>Circulation Desk Information Requests</p> <p>(Call Number Look-up; availability of journals, etc.)</p> <p>31,711</p>
<p>Materials Budget</p> <p>*FY 00 Budget</p> <p>**Projected FY 01 budget;</p>	<p>Total:* \$5,370,797</p> <p>Serials 4,374,230</p> <p>Books 542,659</p> <p>Non-Print 161,305</p> <p>Historical 292,603</p> <p>Non-Print does not include licencing access to secondary databases. NLM plans to increase licencing for more electronic materials in FY 01.</p>	<p>Total:** \$3,000,000</p> <p>Serials 1,800,000</p> <p>Books 200,000</p> <p>Non-Print 1,000,000</p> <p>Non-Print category includes electronic journal subscriptions and databases.</p>
<p>Customer Base</p>	<ul style="list-style-type: none"> ● Health care providers, researchers, scholars, and students ● librarians and information specialists ● historians of medicine and science ● general public 	<p>NIH library services are only available to current NIH employees</p> <p>Primary audience 6-8,000 currently employed physicians and Ph.D. researchers.</p>

Staffing *Staffing figures reported for NLM's Division of Library Operations only. There is a small discrepancy between the total FTE and the numbers reported for individual sections. The 281.46 total is the accurate figure.	*Total: 281.46 FTE <ul style="list-style-type: none"> ● Acquire, Organize, Preserve Biomedical Information [Equivalent to NAL TSD, Preservation, and Special Collections] = 174.6 ● Provide Access to Biomedical Information [Equiv. to NAL PSD] = 83.3 ● Increase Awareness & Use of NLM Services Among Health Professionals = 10 ● Increase Awareness & Use of NLM Services Among the Public = 6.31 ● Strengthen the National Network of Libraries of Medicine = 3.6 ● Further Medical Informatics Research = 3.6 	Total: 56 FTE Federal Positions <ul style="list-style-type: none"> ● Translators = 2 ● Information & Education Svcs [Equivalent to NAL PSD, IRSB -- nearly all professional level] = 20 ● Collection Organization & Management [Equiv. to NAL TSD -- 4 librarians] = 8 ● Information Delivery [Equiv. to NAL PSD, DDSB -- 1 librarian] = 18 ● Administrative Staff = 3 ● Systems [Equiv. to NAL ISD -- 3 computer specialists and 2 in-training] = 5 20 Contract Employees: photocopying services, shelving, some pulling, and maintaining the self-service photocopy center
Total Budget Projected for FY 01	Library Operations: \$56,752,000 Total NLM: \$230,135,000	\$9,500,000 (includes budget for overhead and space charges ~ \$850,000)

Budget Comparison: NAL and NLM, Division of Library Operations

Table 2 outlines NLM's organizational structure. The column "Equiv. To NAL" will have a check mark if the NLM entity has a counterpart at NAL. Within the organizational structure of NLM the Division of Library Operations most closely approximates the services and functions of the National Agricultural Library.

[Chart 1](#) tracks the % Change in NLM's Division of Library Operations budget between 1992 and 2001. The average percent change was 7.6% increase/year with a range of 1.3 to 18.1%. {Percent change = [(Budget total year 2 - Budget total year 1)/Budget total year 2] * 100}

[Chart 2](#) provides information about the relative size and trend of the NLM's Division of Library Operations budget relative to the overall NLM budget. The last column in Table 2, \$'s in LO Budget will have a check mark if the budget information for that division/branch has been included Library Operations Budget in the accompanying chart.

Finally, [Chart 3](#) provides direct budget comparison between NLM's Division of Library Operations and the NAL budget for the last ten years.

Table 2. Comparison of NLM and NAL Organizational Structure

Organizational Unit	Equiv.To NAL	\$'s in LO Budget
Office of the Director	Yes	No
Advisory Body: NLM Board of Regents	No	No
Office of Administration	Yes	No
Office of Communications and Public Liaison	Yes	No
Office of Health Information Program Development	No	No
Library Divisions		
Division of Extramural Programs	No	No
Advisory Body: Biomedical Library Review Com.	No	No
Biomedical Information Support Branch	No	No
International Programs Branch	No	No
Office of Program Planning and Evaluation	No	No
Division of Library Operations	Yes	Yes
Advisory Body: NLM Literature Selection Technical Review Committee	No	Yes
Bibliographic Services Division	Yes	Yes
Index Section	Yes	Yes
Medlars Management Section	Yes	Yes
History of Medicine Division	Yes	Yes
Medical Subject Headings Section	Yes	Yes
National Information Center on Health Services Research	No	Yes
National Network Office	No	Yes
Public Services Division	Yes	Yes
Collection Access Section	Yes	Yes
Preservation and Collection Management	Yes	Yes
Reference Section	Yes	Yes
Technical Services Division	Yes	Yes
Cataloging Section	Yes	Yes
Selection and Acquisition Section	Yes	Yes
Serials Records Section	Yes	Yes
Division of Specialized Information Services	No	No
Biomedical Information Services Branch	No	No
Biomedical Files Implementation Branch	No	No
Office of Outreach and Special Populations	No	No
Lister Hill National Center for Biomedical Communications	No	No

Advisory Body: LHCBC Board of Scientific Counselors	No	No
Audiovisual Program Development Branch	No	No
Cognitive Science Branch	No	No
Communications Engineering Branch	No	No
Computer Science Branch	No	No
Office of High Performance Computing and Communications	No	No
National Center for Biotechnology Information	No	No
Advisory Body: NCBI Board of Scientific Counselors	No	No
Basic Research Branch	No	No
Information Engineering Branch	No	No
Information Resources Branch	No	No
Office of Computer & Communications Systems	Yes	No
System Technology Branch	Yes	No
Application Branch	Yes	No

Note: There is no comparable function at NLM for the customized individual reference services to special audiences provided by the Information Centers at the National Agricultural Library.

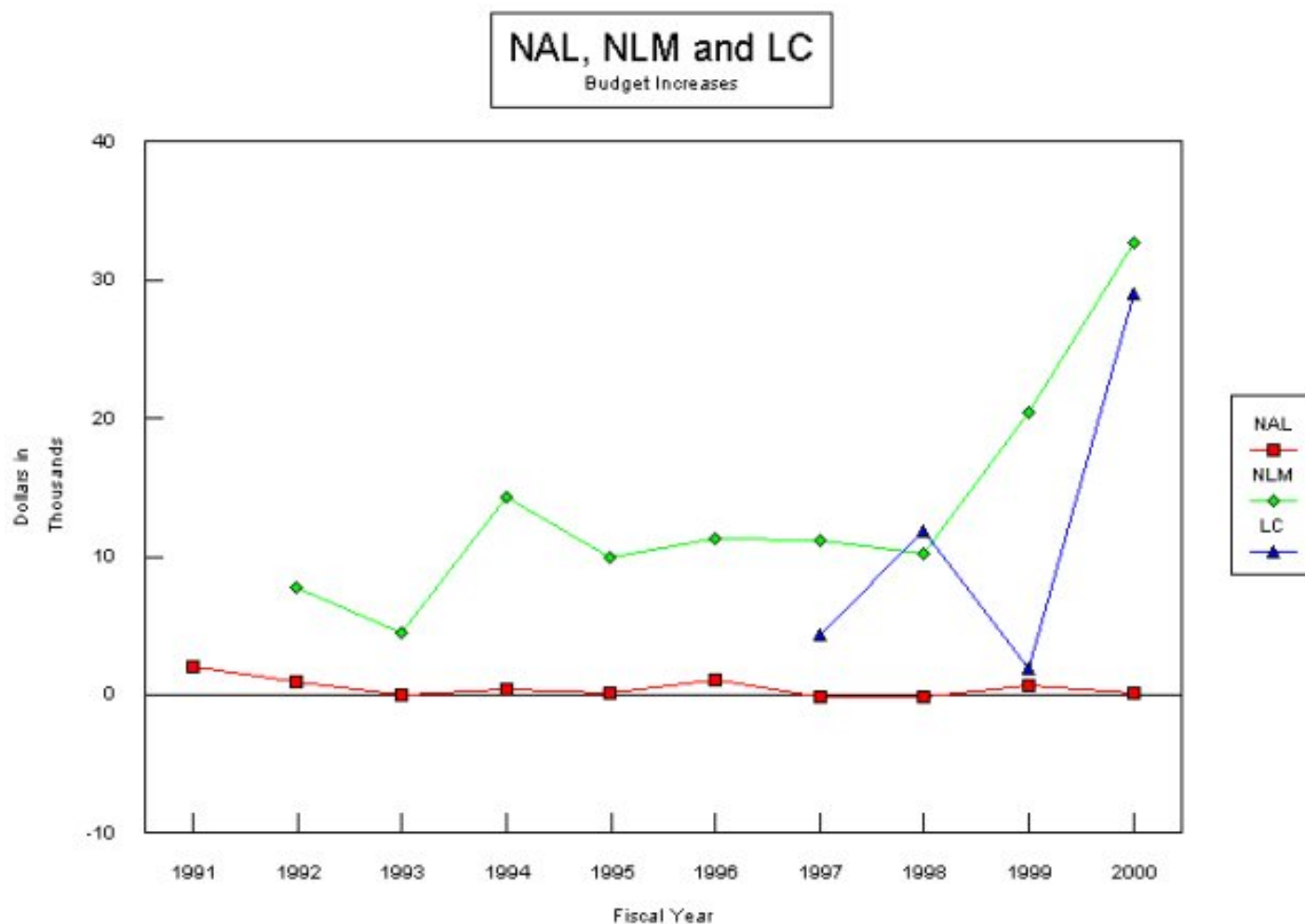
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Appendix I



NAL, NLM, and LC Budget Increases

Comparison of National Agricultural Library, National Library of Medicine and the Library of Congress Budget.

Year	NAL Congressional Appropriation (000)	Increase/ Decrease (000)	NLM (000)	Increase/ Decrease (000)	LC (000)	Increase/ Decrease (000)
1990	\$14,676					

Section I

1991	\$16,798	\$2,122	\$91,182			
1992	\$17,715	\$917	\$98,937	\$7,755		
1993	\$17,715	\$0	\$103,496	\$4,559		
1994	\$18,155	\$440	\$117,783	\$14,287		
1995	\$18,307	\$152	\$127,723	\$9,940		
1996	\$19,464	\$1,157	\$139,111	\$11,388	\$261,497	
1997	\$19,319	(\$145)	\$150,329	\$11,218	\$265,853	\$4,356
1998	\$19,208	(\$111)	\$160,516	\$10,187	\$277,775	\$11,922
1999	\$19,948	\$740	\$181,014	\$20,498	\$279,645	\$1,870
2000	\$20,050	\$102	\$213,730	\$32,716	\$308,628	\$28,983
2001	\$20,359	\$309	\$250,000	\$36,270		

*Final calculation of FY 2001 budget has not yet been completed.
FY 2001 NLM figure is an estimate.

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Appendix J

Some sample quotes from selected questions

Question 4: Describe what types of agricultural-related information and reference services you would like to see our nation have by the year 2010.

Ever watch Star Trek? That's what I want.

AGRICOLA just does not cover everything I need.

A comprehensive, consolidated search database of all available materials in the system.

A fully integrated linkage to every major university library system worldwide so that resources can be downloaded or sent electronically to where they are needed. Don't try to become only a huge repository, since you will never be able to keep up. Get the best technical talent to constantly find new sources of information and ensure you have the ability to keep up with the technology. Hire contractors or term employees who are top notch, don't hire staff whose skills will quickly become outdated, but who have to be retained, thus hindering your ability to adjust to evolving demand.

A help guidebook at the computer workstation on using the databases.

A perfect information gathering world from the client's perspective would be: to find relevant citations on any topic by searching in one mega-database; the citation/abstract links directly to the article or book cited; and, if the book or article has interesting references or footnotes, they link directly to the items cited.

If NAL wants to be the public's source of agricultural information, they will have to upgrade AGRICOLA so it is actually usable by the public (abstracts for more entries, sources of documents clearly indicated) and back it up with a service that leads the users more reliably to the indexed information. Even links to a map of depository libraries would help.

The facsimiles that I have received have been mostly illegible.

...since the inception of the e-mail service, the quality of search results has gone way down. There are way too many unproductive results from fields of study in which I have no interest at all. I have called and tried to get this fixed, but to no avail. It seems like asking a lot, but to be able to have all literature databases under the same searchable roof could speed things up tremendously. Otherwise, when one has an idea but needs to spend half a day to get the answer instead of 30 minutes, the brainstorming is just not the same.

I would like to see a directory of what services and informational sites are available.

I understand there is some consideration being given to closing the DC reference center at the USDA facility on index. Please don't do it! Please maintain this oasis of quiet, and real magazines, and real people to answer questions. I go to the reference center several times a month to catch up on magazines like the futurist, ADA journal, Demographics, and Alternative Agriculture.

I would like to get clear, clean reproductions of articles printed on both sides of the pages. Faxing articles results in unreadable text, undecipherable graphs & tables, and 2 times the paper (and space) resources.

I would like to have a system where you entered a keyword or phrase and all the available research would be accessible or at least information indicating which universities had the research in that area.

I would like to have on-line access to all of the major journals in a virtual library, this would also include archived journal issues.

Need a PubMed type of bibliographic access for food and agriculture literatures.

The challenge for me is not having a single source indexing service to determine where the information is located. Currently, there are gobs of information available, but it is scattered all over in individual repositories, many of which are not linked together, making the accessing the information difficult at best.

NAL's web page is thorough and it clearly outlines the services that are available. Like all of the rest of us, they have to come to grips with the fact that people are going online for their information, and they are not reading text that they judge 'peripheral' to the information they are seeking. Information seekers MAY read some text if it pops up when they need to know, but they are not going to search AGRICOLA, then go to the Library's site to find out their document delivery policies. If NAL views AGRICOLA as its window they need to upgrade and integrate the information they want to share through that site.

The National Agricultural library should be refurbished so it once again becomes the world preeminent Agriculture library. This entails subscribing to more journals, forging greater cooperation with the land grant universities, having more service personnel to serve the nations science community, and making greater and greater amounts of the holdings and assets (databases) more friendly to remote access. It appears to be underfunded as is everything.

There needs to be a website with all types of information of existing books and journals of all major libraries. The resources from these institutions needs to be pooled so anyone can access this by request through local and interlibrary copying of the materials. If the publication is web-based, then there should be access to individual users and paid for by the local institution. There could also be a way to pool the cost so that it is paid for per usage by the local institutions.

We need to be able to obtain copies of journal articles on line without requesting them through an email request and then waiting for them to be sent by mail or through Ariel electronic transmission We also need to be able to search current journals online and be able to read articles and then directly print them.

Question 5: Which information services available from any of the other 3 national libraries, or any other library system, do you find most useful for your own needs?

I constantly use the DC Reference Center for information demands that I have to meet on short notice. I rarely have the luxury of personally browsing through materials or databases, so rely on professional expertise to help

guide me to the most fruitful resources. They also provide support services like calling to expedite my receiving a requested article or book that I need to finish short deadline policy analyses.

I have found PubMed to be the most useful, the other sites have been quite slow and my searches seem to pull up a lot of extra non-useful information that it takes too much time to sort through to make it worth the chance of coming across something useful.

If NAL wants to provide national agricultural information services by 2010, certainly they need to go to 'the people' to find out what information they are seeking. Then NAL must create or compile content, not just indexing. The categories and specific information sought by 'the public' can be easily identified, at least generally--track questions and information seeking behavior through cooperation with USAIN and IIALD librarians. I find our users, faculty and students included in there with the general public, increasingly less willing to wade through pieces of the puzzle. They want 'packages:' mosquito eradication in wetlands or farm ponds, how to 'reforest' my backyard, find a recipe my grandmother used during the depression, to name just a day's 'catch.' Can NAL become a provider of information packages related to agriculture instead of 'just' indexing? Can it become a gateway to information being churned out by its own as well as other agencies? Is it realistic to expect them to do so? I'm not sure, but you asked!

... retrospective indexing is certainly becoming more important, as folks are less willing to work hard to find things that aren't in a computer. NAL has done some work in this area in the past, and sometimes older cites are found in AGRICOLA. If more older USDA publications could be made available through indexing or full text, that would be a great service for librarians who are becoming themselves less adept (as the old guard disappears) in seeking and finding information that isn't online.

Quick response to requests for information and assistance. Innovative approaches to providing service to research and practical inquiries. Attempts to include regional and local information in resources.

The equivalent of the ERIC document collection would be nice for "gray literature," but I don't see that happening.

The obvious comparison is to ERIC, but I'm not sure that can be created retrospectively. Certainly ERIC has been slightly more responsive to the shifting information paradigm, but I don't think they are a current model. The NLM provides an incomparable database. Maybe that can't be created retrospectively either, but NAL could "go forward" from 2000 and that would be a good contribution. Impeccable indexing and online links to government publications (the modern equivalent of ERIC's microfiche)--what more could we ask?

Question 9: What do you consider the most important or critical service currently provided by NAL?

NAL should take a lead in providing agricultural information to the public, and should employ the latest search and linking technology. NAL can be the starting point to other USDA sites which have publications. DC Reference Center offers a multitude of concrete and tangible-as well as intangible- services to its patrons that simply are not practical, cost-effective, or timely to attempt to provide online as a substitute option. If cost of the DC Reference Center is an issue, then please investigate the possibility of "green booking" those expenses, on a pro rata basis, to USDA's program agencies and staff offices, and KEEP the DC Reference Center!

Document delivery of materials listed in AGRICOLA that are not available anywhere else but NAL.

Sending copies of papers in older journals and sending older reference books... Service is great, and I am more than satisfied. They have never failed me, even when I have requested the most obscure journals.

Question 10: What new or improved service would you like NAL to provide in the future?

AGRICOLA database needs to be improved. If abstracts for the older literature could be provided it would be great. Also, the web-based AGRICOLA needs to be improved. When I used it, there was no way to download the information into a database manager like Procite or Reference Manager and then manipulate it to get it set to output selected articles into a text file, use WordPerfect to format the format that the document delivery system can take and email the request as an attachment.

If NAL had more funding to improve existing services, I think they should pay more attention to AGRICOLA. A comprehensive, integrated database available to users worldwide as the web version is now, could be an important source of information to many citizens, including farmers, foresters, [etc]... If this database also linked outward to U.S. government publications and web-based Extension and Experiment Station publications it would be a great public service as well as an important example for distribution of information. Even if AGRICOLA linked ONLY to those publications of USDA, it would be a wonderful asset to information seekers.

NAL needs to provide training (online or in person) to scientists of all the services that they already offer, especially to government employees. Possible locations of these training sessions could be RL meetings, and new scientist orientation. Periodic electronic newsletter broadcast to ARS research scientists highlighting the services that NAL does provide.

QUOTES FROM SURVEY RESPONDENTS

What do people want from an information system in the year 2010:

A fully integrated linkage to every major university library system worldwide so that resources can be downloaded or sent electronically to where they are needed.

A perfect information gathering world from the client's perspective would be: to find relevant citations on any topic by searching in one mega- database; the citation/abstract links directly to the article or book cited; and, if the book or article has interesting references or footnotes, they link directly to the items cited.

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Ever watch Star Trek? That's what I want.

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Blue Ribbon Panel Survey of the National Agricultural Library

*Staff Survey Results submitted
by the
Library of Congress
3/12/01*

Explanatory material and
additional staff
comments were added
after 3/12/01 and are not
found in the print
version of this report.



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A Guide to Using the Pie Charts and Analyzing Results of the Survey

- **53 staff responded to the survey**
- **Not all questions were answered by the respondents**
- **Respondents gave several answers to the same question**
- **Not every answer is represented in the pie charts**
- **The pie charts focus instead on the major issues:
NAL's strengths, weaknesses, services, barriers**
- **The numbers in the pie charts are representative of predominant responses by staff to the major issues**
- **The additional comments represent individual responses**

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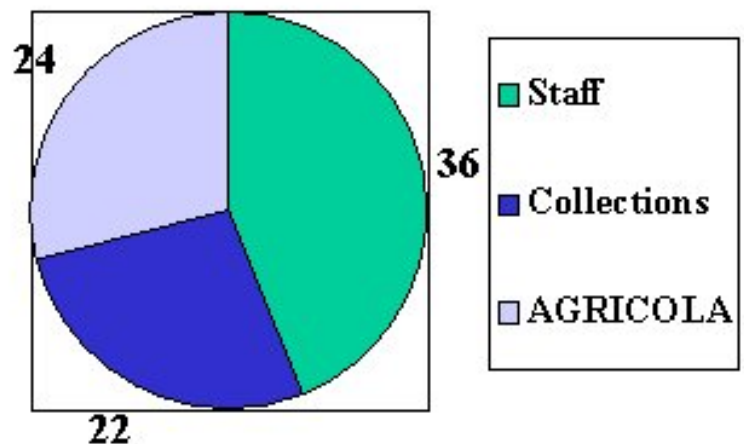


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Major Strengths

- Respondents considered major strengths to be knowledgeable and dedicated **staff** committed to mission of providing customer service
- Respondents viewed the **collections**, particularly the historical and special collections in agriculture and horticulture, especially those published in the USDA agencies and the grey literature, as strong elements that make NAL a valuable resource
- Access to the collections through the online catalog, the Information Centers, and information technology services such as **AGRICOLA** were considered to be major strengths



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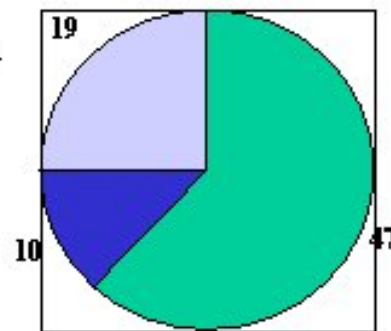
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Weaknesses

Management:

- No experience
- Lack of literacy in sciences which has led to bad decision-making and decrease in funding
- Lack of vision
- Poorly planned initiatives with no follow through or prioritization
- Unprofessional behavior
- Mistrust and poor utilization of staff
- Lack of communication between staff and management
- Failure to address staff problems
- Poor leadership of director
- Lack of accountability



■ Management Issues
 ■ Outdated databases
 ■ Budget

Outdated databases:

- Decline in quality of coverage of AGRICOLA database
- ISIS catalog needs replacing with system that has improved searching capabilities
- VTLAS is outdated and not Web-based
- Usage data not systematically reported
- Aged OPAC and Web site

Budget:

- Shrinking budget which prevents NAL from properly fulfilling its responsibilities
- Shrinking staff and increased work
- No staff training
- Too much emphasis on outside funding
- Lack of input from staff on budgetary issues
- Funding for unnecessary cosmetic renovations

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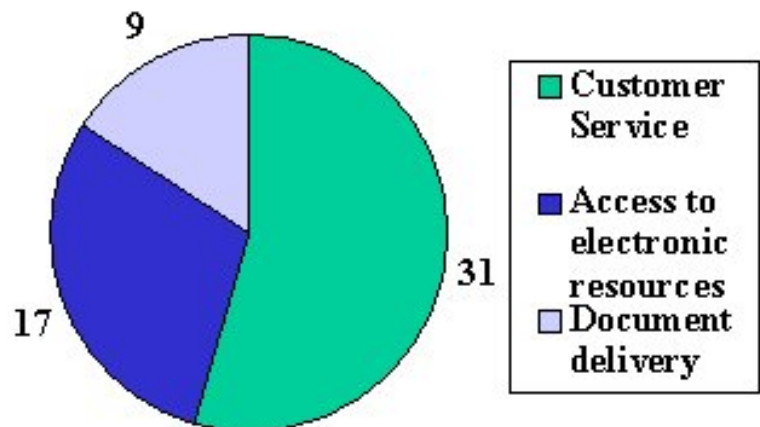


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Critical Services

- **Customer service** (reference) to USDA agencies and ARS were considered to be the most important service
- Patron **access** to Web AGRICOLA, AGNIC, and NAL's Web site are the best services
- **Document delivery** to USDA and congressional customers is a major NAL asset, although there was criticism of the inefficient tracking system for ILL



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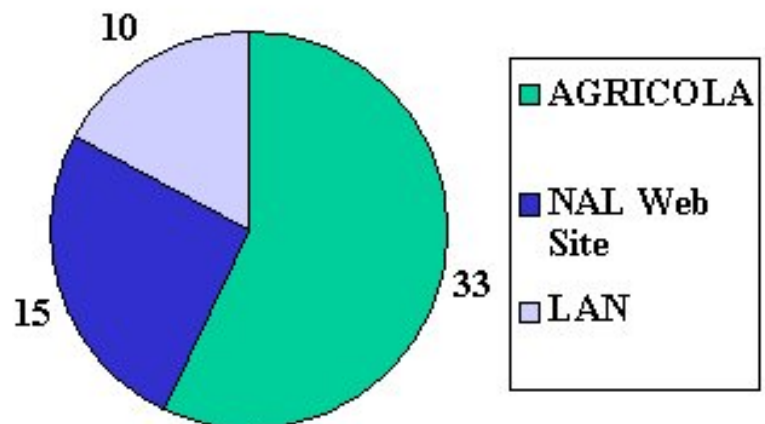


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New or Improved Services

- Enhancement of content on **AGRICOLA** database and provision of more user-friendly interface for Web version
- Redirect funding towards redesigning **NAL Web site**, supply better search engines, metatags, graphics, user studies, self tutorials
- **LAN** services: Increased access to full text electronic resources, more Web development, electronic tracking of patron requests, overhaul of OPAC (new ILS), employment of modern media and communications specialists to support existing and future technological programs



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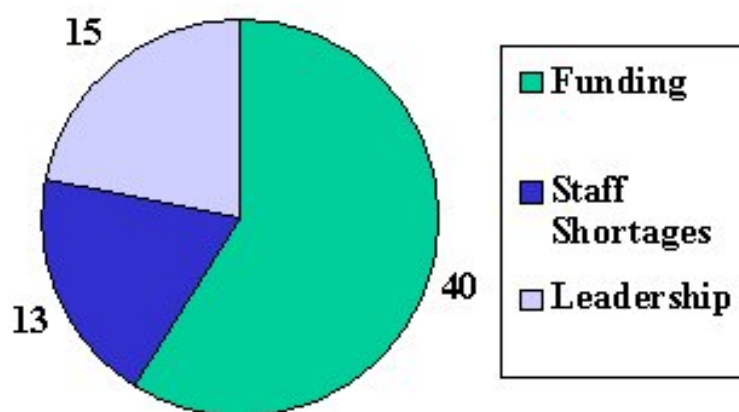


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Barriers

- The number one impediment was **funding**, due to untapped avenues of generating revenue and limits on budget over period of 5 years or more
- **Staff shortages** which cause a decrease in productivity levels
- Strong **leadership** in management lacking
 - fear of change
 - lack of staff training
 - unmotivated staff



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Type of Work, Length of Service

- **Type of work:**
 - Majority of respondents employed in public service, information systems development, and library administration
- **Length of service:**
 - The term of service for staff responding to the survey ranged from 3 months to 18 years

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Additional Comments

- Need better leadership: management lacks focus, priority
- Better marketing of NAL products
- Hire development official to generate funding
- Foster improved relationships among staff and management
- More staff training
- Improve building landscaping
- Need bioinformatics at NAL
- We would benefit from TQM training
- There is favoritism and low morale
- NAL needs an onsite training manager

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Additional Comments

- NAL should again be a separate agency
- NAL should encourage sabbaticals by professors in agriculture
- The summer student program is a good one
- Contractors should be allowed to park in the staff parking lot
- NAL needs a Friends of NAL group to lobby Congress for money
- Sources of funding are lost because management does not value the Information Centers
- NAL should maintain a high presence in the USDA by increasing collections of the DC Reference Center
- NAL needs to shift the focus to projects with potential for generating income

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Additional Comments

- Talented staff seldom called upon for ideas
- Basic utilities (lights) are maintained through lapsed salary, diversion of program monies, reduced collection
- Staff are performing an inordinate amount of work for little compensation
- Appreciate support USAIN is providing
- Leaving for another job, worst morale of any place I've worked
- Never heard complaints and feel NAL has good, knowledgeable staff
- NAL needs more opportunities for meaningful interaction among offices and branches to increase staff understanding of its mission
- Please consider the impact Blue Ribbon Panel decisions will make on staff, resources and facilities as well as NAL products

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Additional Comments

- Need significant increases in NAL resources: note <http://www.plumbdesign.com> for examples
- Thank you for listening
- NAL has much to change to gain respect among the library community
- NAL is a national treasure that has been lost. Hope the Panel can dig it out
- Suggest small core of staff continue to provide USDA headquarters with specialized information services
- Funding should be derived through “green book”
- Special information center should be created for downtown facility to support DCRC so that it is showcased to enhance awareness of NAL to USDA agencies

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Additional Comments

- Staff job hunting or counting days until retirement
- Communication deplorable, rumors rampant, nepotism is alive and well
- I hope that Blue Ribbon Panel “shakes up NAL”
- NAL has lost its unity and now has 20-25 competing, mediocre, small libraries
- I have little hope staff concerns will be addressed because they have not in prior surveys
- Outside evaluators believe what NAL management tells them
- Critical staff ignored and NAL losing best employees
- Hope Blue Ribbon Panel will address staff concerns this time around

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Appendix L

Technical Services Division
 Performance Indicators

Activity	FY97 Number of Items	FY98 Number of Items	FY99 Number of Items	FY00 Number of Items
Articles indexed				
NAL	70,942	61,647	49,339	48,033
Other	2,947	12,500	16,632	16,362
Total	73,889	74,147	65,971	64,395
Abstracts	25,334	27,898	25,122	20,637
Titles cataloged				
NAL	15,778	16,143	15,338	13,656
Other	920	550	188	0
Total	16,698	16,693	15,526	13,656
National Cataloging Programs				
NACO* headings	1,139	1,005	1,085	869
CONSER** records	583	489	576	415
BIBCO*** records	300	363	417	414
Acquisition Funds Expended				
Serials	1,966,459	1,941,125	2,229,050	1,926,438
Monographs	287,986	308,617	248,771	347,304
Total	2,254,445	2,249,742	2,477,821	2,281,508
Titles Sent to Cataloging				
Serials	571	532	804	559

Monographs	9,620	8,188	7,035	9,106
Total	10,191	8,720	7,839	9,665
Serial volumes added	15,114	13,678	11,368	11,596

* NACO, CONSER and BIBCO are components of the international Program for Cooperative Cataloging.

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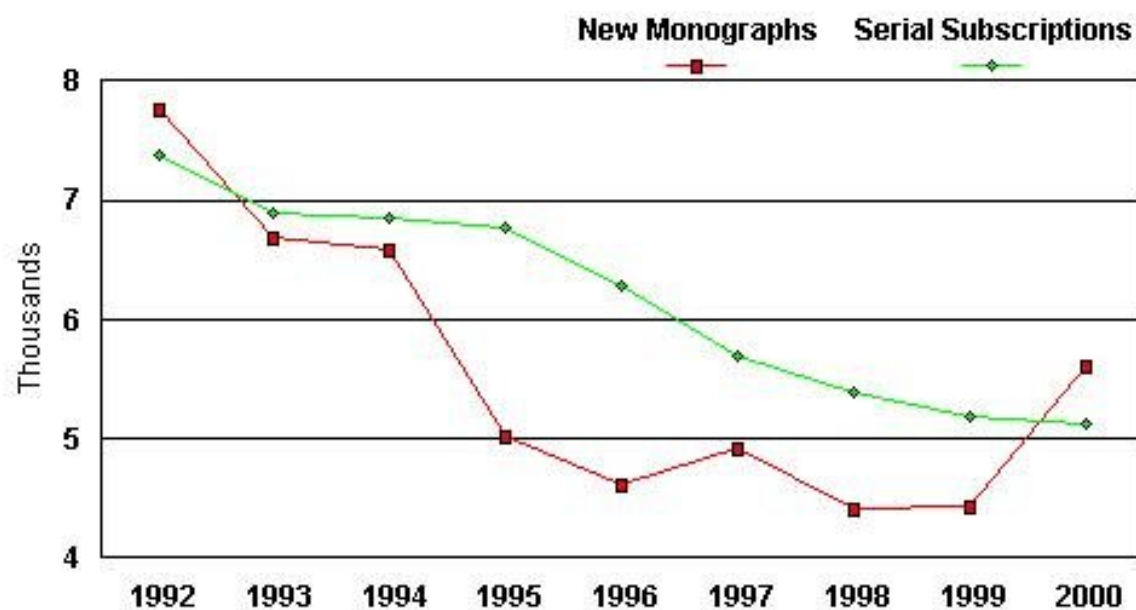
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Appendix M

NAL Materials Acquisitions



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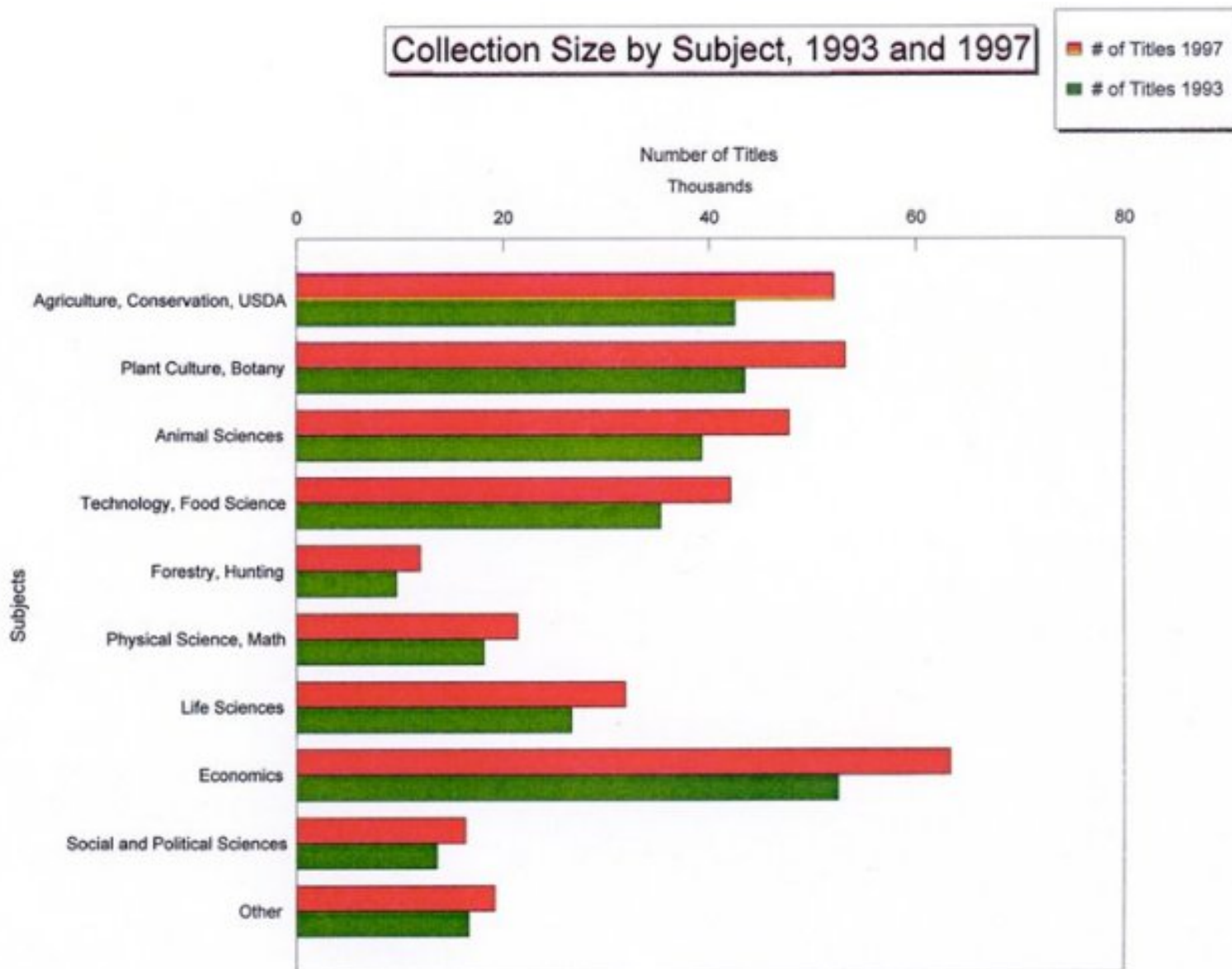


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Appendix N

Collection Size by Subject, 1993 and 1997



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Appendix O

NAL Strategic Plan FY 1996 - 2001 Annual Operating Plan FY 1999

KRA #1: Information Access and Management

Definition: The goals, activities and measures under this key result area address how the NAL staff will provide global leadership in the identification and implementation of new methods, techniques and technologies to improve access to, and management of, agricultural information.

General Goal 1: Information Services
 Create conditions by which NAL's diverse customers can efficiently and cost effectively identify, locate and obtain desired information on agricultural topics.

- Load the retrospective shelflist records for pre-1966 monographs to the online public catalog.
- Plan and initiate the retrospective conversion on older serials records from the manual serials file.
- Complete the loading of pre-1976 retrospective indexing records to the master AGRICOLA database at NAL.
- Implement Aegis help desk software and evaluate its utility for other NAL applications.
- Enable patrons to self-request materials from NAL's collection through ISIS.
- Provide the information technology infrastructure to support the information management and dissemination needs of NAL's Electronic Media Center, The Rural Information Center, the DC Reference Center and NAL's local area network.
- Implement both a Web-based self-search service and an SDI service based on Current Contents and AGRICOLA for Current Awareness Literature Service (CALS) clients.
- Migrate NAL's current library management system to the latest release to ensure Y2K compliance and provide native telnet capabilities.
- Develop functional requirements for the acquisition of a new library management system.
- Decrease throughput time for receipt processing of collection materials; increase the number of monographs that are received and processed as "shelf-ready".

General Goal 2:	Electronic access Enhance access by contributing to the content, organization, access to, and retrieval of, electronic materials. <ul style="list-style-type: none">● Continue the integration of electronic resources into selection and cataloging operations by selecting appropriate Ag databases in AgNIC for cataloging.● Implement a cataloging template and standard for metadata description of AgNIC resources.● Develop guidelines and requirements for indexing and linking ARS electronic manuscripts and publications.● Implement URL link checking programs for the catalog and AGRICOLA database to identify automatically any broken or invalid links.● Migrate from CD-ROM to Web-based dissemination of electronic publications. Develop a streamlined process for digitizing print resources and making them Web-accessible. Evaluate and incorporate SGML technologies where appropriate.
General Goal 3:	Information products Create products that support information needs in a changing cultural environment, and make them widely available through electronic publishing, Internet access, and state-of-the-art storage and retrieval methods.
General Goal 4:	Outreach Promote the availability and use of NAL s resources and information products.
General Goal 5:	Training Develop and implement programs that enable customers and staff to take full advantage of current and emerging technologies and information systems.
KRA #2: Collection Enhancement and Preservation	
Definition: The goals, activities and measures under this key result area address how the NAL staff will ensure that agricultural information essential to the Nation is identified, acquired and preserved at the local, national and international levels.	
General Goal 6:	Resources Identify information resources relevant to new developments that facilitate the progress of agriculture.
General Goal 7:	Preservation Preserve landmark works in agriculture and the fields related to agriculture to ensure the legacy of NAL s collection as a national treasure.

- Continue the development of an electronic publishing/archiving process including provisions for metadata creation and the long term storage and access to electronic publications.

General Goal 8: Cooperation
Promote cooperative programs at the local, national and international levels to provide coordinated collection development, access and preservation.

KRA #3: Human Resources Development and Utilization

Definition: The goals, activities and measures under this key result area address how the NAL staff will create an organizational climate that produces a high performance work force by encouraging staff innovation, communication and teamwork, and by implementing an integrated training and development program that focuses on the continuous improvement of technical, professional, and interpersonal skills.

General Goal 9: Organizational climate
Use quality management principles to create a flexible and team-oriented environment that is customer-driven and action oriented.

General Goal 10: Staff quality
Attract, develop and maintain a skilled, versatile, competent, and diverse work force for the future.

- Support and implement supervisory training for NAL supervisors, including writing skills training. Develop position description and recruit for AGRICOLA Coordinator in Technical Services Division.

General Goal 11: Facilities
Provide a physical environment that is safe, well-equipped, and conducive to productivity.

- Upgrade NAL's existing remote access (dial-up) solution.
- Develop NAL Intranet.
- Develop a security plan for NAL followed by the design and installation of a firewall to protect NAL systems.
- Continually improve the reliability and redundancy of all NAL servers.

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Appendix P

NAL Strategic Plan FY 1996 - 2001
Annual Operating Plan FY 2000

KRA #1: Information Access and Management

Definition: The goals, activities and measures under this key result area address how the NAL staff will provide global leadership in the identification and implementation of new methods, techniques and technologies to improve access to, and management of, agricultural information.

General Goal 1: Information Services
Create conditions by which NAL's diverse customers can efficiently and cost effectively identify, locate and obtain desired information on agricultural topics.

Develop new techniques and improve existing systems for public services:

- Institute reference service policies based on new tiered-services structure.
- Establish merged services information desk and electronic services center in the renovated NAL reading room.
- Participate in and pilot test Answer Base, part of the Library of Congress Digital Reference Initiative.
- Identify a front-end system from which USDA users can generate electronic "requests for materials" from the AGRICOLA database and ISIS and prepare a budget proposal.
- Expand and promote the use of ARIEL document delivery software to USDA customers and other high-use groups.
- Explore and recommend additional software packages to further expand electronic document delivery.
- Implement new User Fee Policy for document delivery.

Enhance automated data creation and dissemination:

- Complete a functional requirements document for acquisition of a new electronic library management system; evaluate currently available commercial off-the-shelf systems; and develop acquisitions strategy for the procurement of a new electronic library management system.
- Migrate NAL's current library system to latest release (VTLS 99). Develop migration plan for move from existing proprietary ISIS system to one based on UNIX/Oracle system.
- Develop specifications for developing and implementing an improved online front-end data entry system for the current VTLS Indexing subsystem.
- Distribute to AGRICOLA licensees the retrospective conversion records added to NAL's database in 1999.
- Prototype SGML/XML/MARC/Dublin Core options for database development efforts.

Improve timeliness and coverage of AGRICOLA database:

- Complete the loading of pre-1976 retrospective indexing records to the master AGRICOLA database at NAL.
- Develop cooperative arrangements with other agencies and sources to obtain machine-readable bibliographic records for loading to AGRICOLA.
- Obtain publisher-supplied citations and abstract data in digital form for indexed journals and ARS publications; investigate building preliminary AGRICOLA citation records with externally created data..
- Streamline handling of indexed journals and establish special check-in unit to expedite handling of issues to be indexed.

General Goal 2:

Electronic access

Enhance access by contributing to the content, organization, access to, and retrieval of, electronic materials.

- Continue to develop hierarchically arranged subject classification for organizing electronic resources in agriculture and related subjects; modify and augment for use in the AgNIC gateway and the Research Management Information System of ARS.
- Review, select and add to the online public catalog all appropriate electronic resources in the AgNIC agriculture database file.
- Expand web-based access to NAL-provided abstracting and indexing databases for staff in the Beltsville area.
- Expand collection of electronic journals available in NAL and provide desk-top access to the collection for USDA staff in the Beltsville area.
- Continue to build content on the USDA History Collection Web Site through completion of the screwworm eradication collection CD-ROM and Web Site.
- Develop AgNIC gateway.
- Expand AgNIC.

General Goal 3:

Information products

Create products that support information needs in a changing cultural environment, and make them widely available through electronic publishing, Internet access, and state-of-the-art storage and retrieval methods.

- Begin developing requirements for a food safety research database in conjunction with stakeholders.
- Develop/update publications in key areas and build content on Web Sites in support of AgNIC.

Publish and distribute in print and Web formats a descriptive inventory of all NAL manuscript collections.

Identify full-text resources in water quality and other areas and create links to their respective citations in the AGRICOLA database.

General Goal 4: Outreach

Promote the availability and use of NAL's resources and information products.

- Raise awareness of NAL's special collections through feature articles in major scientific and library journals.
- Attend and exhibit at major scientific and library conferences.
- Coordinate and execute all activities relating to the NAL reopening event.
- Develop and publish FAQ and/or technical notes to assist users with access and interpretation of bibliographic records in the AGRICOLA Web gateway.

General Goal 5: Training

Develop and implement programs that enable customers and staff to take full advantage of current and emerging technologies and information systems.

- Conduct an NAL orientation with AGRICOLA training for customers at Prairie View and possibly other 1890 land-grant institutions.
- Develop an online tutorial in searching for information on animal alternatives to help researchers comply with the requirements of the Animal Welfare Act.

KRA #2: Collection Enhancement and Preservation

Definition: The goals, activities and measures under this key result area address how the NAL staff will ensure that agricultural information essential to the Nation is identified, acquired and preserved at the local, national and international levels.

General Goal 6: Resources

Identify information resources relevant to new developments that facilitate the progress of agriculture.

- Launch Web Sites in food safety research and invasive species.
- Work with AgNIC alliance to identify collaborators to help support Web-based content building in biotechnology and agricultural trade and marketing.

General Goal 7: Preservation

Preserve landmark works in agriculture and the fields related to agriculture to ensure the legacy of NAL's collection as a national treasure.

- Identify ways of staffing the preservation program and supporting Web development using existing resources.
- Analyze results of Usage Study and propose any necessary modifications to NAL Collection Development Policy for priorities in selection and preservation.

General Goal 8: Cooperation

Promote cooperative programs at the local, national and international levels to provide coordinated collection development, access and preservation.

- Investigate opportunities for garnering additional funds and leveraging existing resources through collaboration and joint ventures with other agencies.
- Continue working with the United State Agricultural Information Network to strengthen NAL's role as the archive of key agricultural information resources preserved at the State level.

KRA #3: Human Resources Development and Utilization

Definition: The goals, activities and measures under this key result area address how the NAL staff will create an organizational climate that produces a high performance work force by encouraging staff innovation, communication and teamwork, and by implementing an integrated training and development program that focuses on the continuous improvement of technical, professional, and interpersonal skills.

General Goal 9: Organizational climate

Use quality management principles to create a flexible and team-oriented environment that is customer-driven and action oriented.

- Finalize and implement the re-organization of the Technical Services Division around two branches.
- Establish a second contracting mechanism to enable any NAL unit to quickly procure staff services needed to respond to new initiatives and/or support key shortage areas.

General Goal 10: Staff quality

Attract, develop and maintain a skilled, versatile, competent, and diverse work force for the future.

- Develop a staff diversity awareness program featuring a speaker or video.
- Analyze staff participation in recent training and meeting opportunities for trends.
- Provide upward mobility opportunities for staff to compete for new positions supporting the operation of the Main Reading Room.
- Actively recruit for the Coordinator of the Food Safety Research Information Office at national conferences, library schools, university libraries, private sector special libraries and government facilities.
- Address top priority concerns identified in the Talico Climate Survey.

General Goal 11: Facilities
Provide a physical environment that is safe, well-equipped, and conducive to productivity.

- Complete all systems wiring modifications for renovated areas.
- Develop NAL Intranet.
- Coordinate and implement activities associated with reoccupation of renovated public areas.

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Appendix Q

NAL Strategic Plan FY 1996 - 2001
 Annual Operating Plan FY 2001

KRA #1: Information Access and Management

Definition: The goals, activities and measures under this key result area address how the NAL staff will provide global leadership in the identification and implementation of new methods, techniques and technologies to improve access to, and management of, agricultural information.

General Goal 1: Information Services
 Create conditions by which NAL's diverse customers can efficiently and cost effectively identify, locate and obtain desired information on agricultural topics.

Develop new techniques and improve existing systems for public services:

- Implement first phase of plan to deliver electronic information resources to the desktop of USDA employees.
- Test and implement new front-end system for generating electronic "requests for materials" from the ISIS library system.
- Test and implement the Relais system to expand user options for obtaining materials electronically from NAL.
- Conduct a survey of D.C. Reference Center users to better identify their information needs.
- Restructure services at the D.C. Reference Center to expand connectivity to electronic resources and better align user needs with NAL resources.
- Develop charge-back plans for USDA users in order to recover costs of document delivery and ensure the future provision of the service.
- Conduct a review of all costs associated with information programs funded through interagency agreements to assure appropriate cost recovery.
- Complete a requirements statement for identifying a reference database and tracking system.

Enhance automated data creation and dissemination:

- Evaluate, select and procure a new electronic library management system.
- Implement an improved online front-end data entry system for the current VTLS Indexing subsystem.
- Re-engineer the automated process for distributing AGRICOLA database updates; use this process to distribute retrospective conversion records.
- Migrate NAL's current library system to latest release (VTLS 2001, HP OS version 6.0, etc) and streamline VTLS transaction logging process.
- Lead effort to populate the central AgNIC database with metadata through internal and external collaborations.
- Develop a database structure and mechanism for collaborative updating and maintenance of the calendar portion of AgNIC.

Improve timeliness and coverage of AGRICOLA database:

- Complete the loading of pre-1979 retrospective indexing records to the master AGRICOLA database at NAL.
- Develop a more streamlined mechanism for loading both MARC and non-MARC records into ISIS.
- Develop cooperative arrangements with other agencies and sources to obtain machine- readable bibliographic records for loading to AGRICOLA.
- Develop or purchase software to convert publisher-supplied citations and abstract data in digital form for indexed journals to preliminary AGRICOLA citation records.
- Streamline handling of indexed journals and establish special check-in unit to expedite handling of issues to be indexed.

General Goal 2:

Electronic access

Enhance access by contributing to the content, organization, access to, and retrieval of, electronic materials.

- Continue to develop hierarchically arranged subject classification for organizing electronic resources in agriculture and related subjects; modify and augment for use in the AgNIC gateway and the Research Management Information System of ARS.
- Identify and implement a new Web search engine to improve access to information on NAL's Website, including ADA requirements.
- Expand web-based access to NAL-provided abstracting and indexing databases for staff in the Beltsville area.
- Expand collection of electronic journals available in NAL and provide desk-top access to the collection for USDA staff in the Beltsville area.
- Continue to build content on the USDA History Collection Web Site through completion of the screwworm eradication collection CD-ROM and Web Site.
- Expand AgNIC subject coverage and partnerships to include international, multilingual collaborators. Begin research and efforts to supply automatic translation tools on AgNIC site.

General Goal 3:

Information products

Create products that support information needs in a changing cultural environment, and make them widely available through electronic publishing, Internet access, and state-of-the-art storage and retrieval methods.

- Continue populating the Invasive Species Web site in cooperation with other government agencies.
- Continue information research activities for the Nuclear Regulatory Commission, the Federal Laboratory Consortium and other groups, to expand access to agricultural and agriculturally related information.
- Begin developing requirements for a food safety research database in conjunction with stakeholders.
- Develop/update publications in key areas and build content on Web Sites in support of AgNIC.

General Goal 4: Outreach

Promote the availability and use of NAL's resources and information products.

- Attend and participate in conferences, exhibits, interagency meetings, etc.
- Publish at least three new AGRICOLA technical notes.

General Goal 5: Training

Develop and implement programs that enable customers and staff to take full advantage of current and emerging technologies and information systems.

- Continue to provide Oracle, Unix, SQL, and other relevant software training opportunities to staff in preparation for the migration to a new Electronic Library Management System.
- Continue cross training of system administrators in Unix and Windows NT.
- Develop and provide training to Washington-based USDA patrons which focuses on accessing library services remotely.
- Create a customized gateway Web page to facilitate navigation for Washington-based patrons and enhanced access to electronic resources from Beltsville.

KRA #2: Collection Enhancement and Preservation

Definition: The goals, activities and measures under this key result area address how the NAL staff will ensure that agricultural information essential to the Nation is identified, acquired and preserved at the local, national and international levels.

General Goal 6: Resources

Identify information resources relevant to new developments that facilitate the progress of agriculture.

- Analyze user survey data and borrowing data from FY 2000 to integrate customer data into decisions on collection purchases.
- Review serials subscriptions for additional cancellations to bring costs in line with diminished materials budget resources.
- Complete the review of serials published on newsprint quality paper.
- Complete the acquisition and selection of all appropriate resources identified in the AgEcon project with the University of Minnesota.
- Provide access via the online catalog to all electronic journals in the Electronic Media Center.

General Goal 7: Preservation

Preserve landmark works in agriculture and the fields related to agriculture to ensure the legacy of NAL's collection as a national treasure.

- Continue digital preservation of the Yearbook of Agriculture.
- Begin scanning and processing the Alvin L. Young Collection on Herbicide Agent Orange with funding from the U.S. Air Force. Support the work of the USDA Digital Publications Preservation Steering Committee.
- Develop staffing plan for the preservation program and supporting Web development using existing resources.
- Create policies and procedures related to the archiving of and long-term access to digital information.

General Goal 8: Cooperation

Promote cooperative programs at the local, national and international levels to provide coordinated collection development, access and preservation.

- Produce an outreach plan to expand partnerships and collaborative funding of project initiatives that responds to the Panel review of Alternative Farming Systems Information Center.
- Work closely with the Joint Institute of Food Safety Research to identify stakeholder needs for creation of the Food Safety Research Website and database.
- In collaboration with stakeholders, develop a proposal for expanding access to animal welfare information.
- In cooperation with the University of Maryland Department of Nutrition, sponsor and train six American Dietetic Association interns in information management techniques.
- Explore the possibilities and options for cooperative research and internships with the University of Maryland School of Library Science.

KRA #3: Human Resources Development and Utilization

Definition: The goals, activities and measures under this key result area address how the NAL staff will create an organizational climate that produces a high performance work force by encouraging staff innovation, communication and teamwork, and by implementing an integrated training and development program that focuses on the continuous improvement of technical, professional, and interpersonal skills.

General Goal 9: **Organizational climate**
Use quality management principles to create a flexible and team-oriented environment that is customer-driven and action oriented.

- Enhance opportunities for team-supported initiatives as part of the discipline-based reorganization of the Information Research Services Branch.
- Address top priority concerns identified in the Talico Climate Survey.

General Goal 10: **Staff quality**
Attract, develop and maintain a skilled, versatile, competent, and diverse work force for the future.

- Analyze staff participation in recent training and meeting opportunities for trends.
- Conduct a national search for a coordinator to lead the Alternative Farming Systems Information Center program.
- Ensure staff participation in Congressional Workshops.
- Support existing staff involvement and encourage future participation of staff in Mid-Level
- Leadership training program.

General Goal 11: **Facilities**
Provide a physical environment that is safe, well-equipped, and conducive to productivity.

- Complete reoccupation of renovated first floor staff areas.
- Relocate fifth floor Public Services staff to third and fourth floors as part of the next phase of renovation.
- Produce a preliminary plan, with associated costs, for conducting a major collection shift in the stacks.
- Begin renovation of the fifth floor to house items that require the highest level of environmental control and security.
- Continue the renovation of the NAL Data Center.
- Install, configure, and bring on-line new or replacement servers received at NAL.
- Transfer ARS HQ Web server files to NT platform at the George Washington Carver Center.
- Install new back-up and recovery software for Web servers and systems.
- Improve security measures, including the reliability and redundancy of all NAL servers.
- Install additional T1 line and backup to support NAL's Internet connection and implement a backup circuit

for NAL's existing Internet T1 connection.

- Develop a proposal for centralized procurement of hardware and software for NAL.
- Upgrade NAL's existing dial-up access solution.

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Appendix R

National Agricultural Library Budget Requests, 1990-2001

The table below summarizes the National Agricultural Library's budget requests. It includes the NAL request, the Department estimate, the President's Budget and the Congressional Appropriation.

FY	NAL Estimate (\$000)	Departmental Estimate (\$000)	President's Budget (\$000)	Congressional Appropriation (\$000)
1990	\$17,933	\$14,947	\$14,947	\$14,676
1991	\$36,071	\$16,672	\$15,773	\$16,798
1992	\$37,098	\$17,320	\$17,453	\$17,715
1993	\$31,147	\$18,851	\$18,025	\$17,715
1994	\$31,404	\$19,226	\$17,915	\$18,155
1995	\$27,084	\$19,663	\$19,620	\$18,307
1996	\$20,852	\$19,539	\$19,534	\$19,465
1997	\$21,503	\$20,812	\$19,487	\$19,319
1998	\$24,124	\$21,387	\$19,394	\$19,208
1999	\$21,394	\$19,770	\$19,584	\$19,900
2000	\$24,269	\$22,075	\$22,157	\$20,028
2001	\$25,362	\$25,172	\$22,252	*

Notes: The numbers above only include direct program and Repair & Maintenance funds

The following numbers are not included in the amounts above:

FY 1998 - \$2.5 million Building and Facilities Funds allocated for 1st floor renovation

FY 1999 - \$1.2 million Building and Facilities Funds allocated for Phase I Air Handler Units

FY 2001 - \$1.8 million Building and Facilities Funds approved for 5th floor renovation

*Final calculation of FY 2001 budget has not yet been completed.

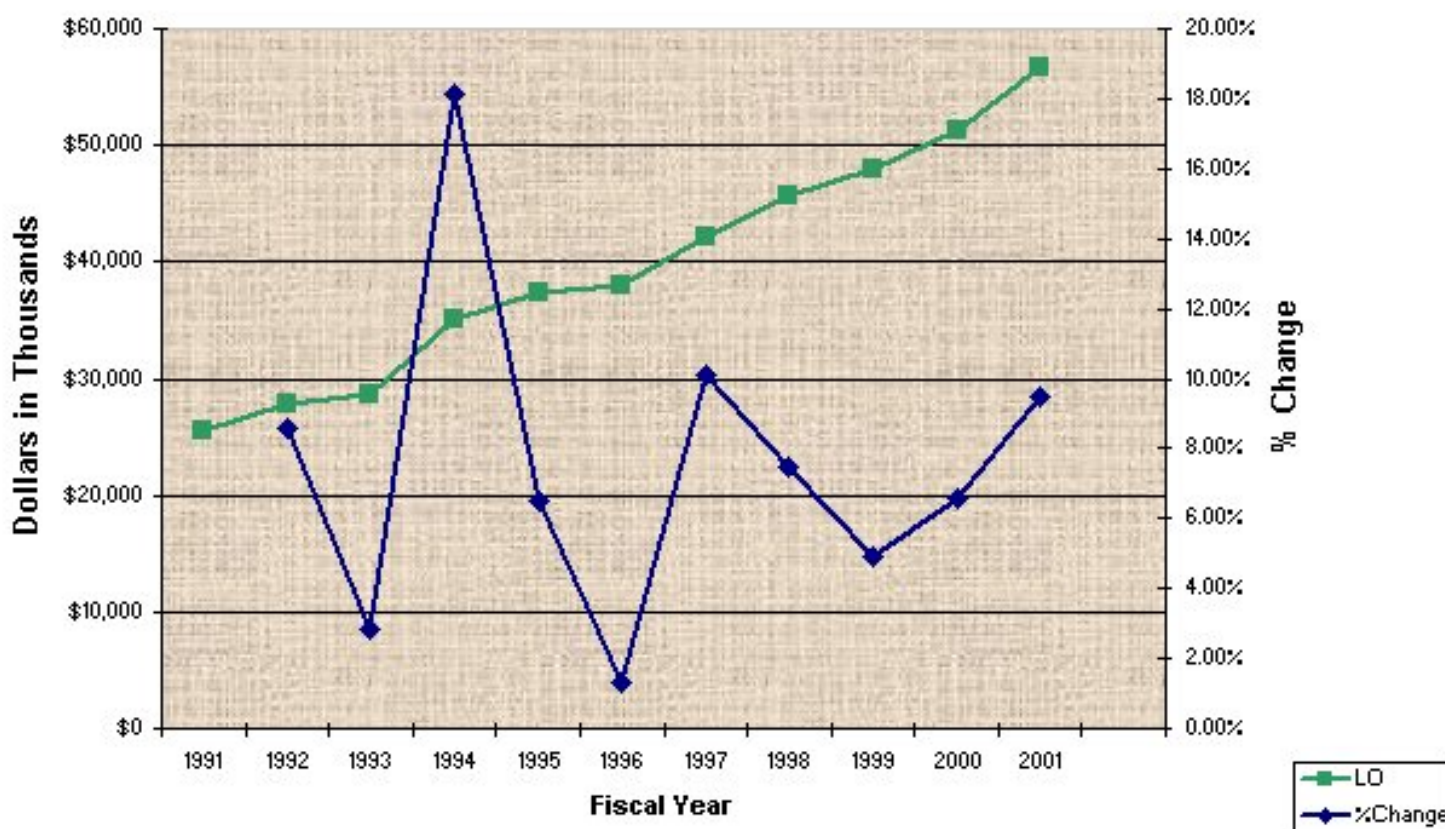
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Appendix S

**Chart 1. Percentage Change in the Budget for
 NLM's Division of Library Operations (LO)**



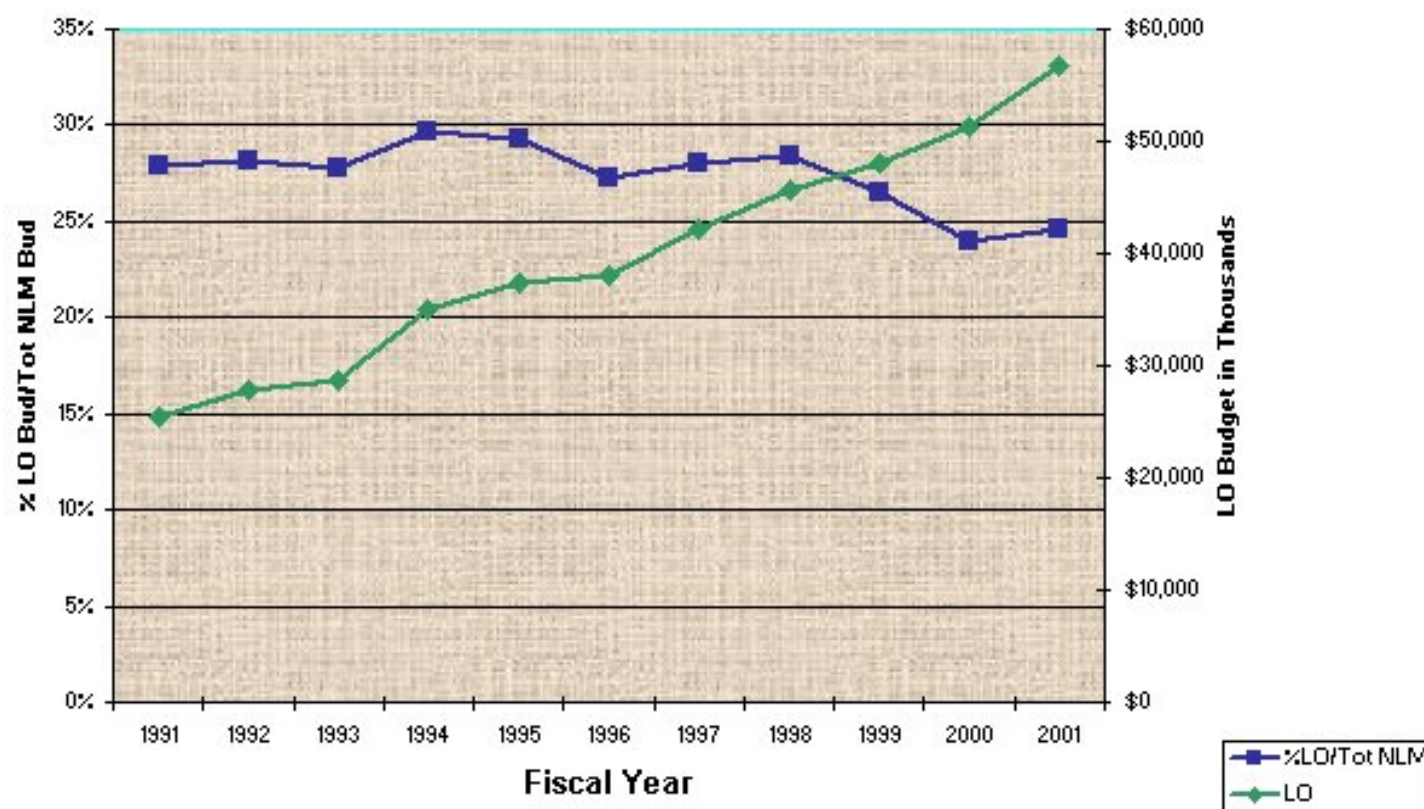
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Appendix T

Chart 2. Division of Library Operations (LO) Budget as a Percentage of the Tot NLM Budget



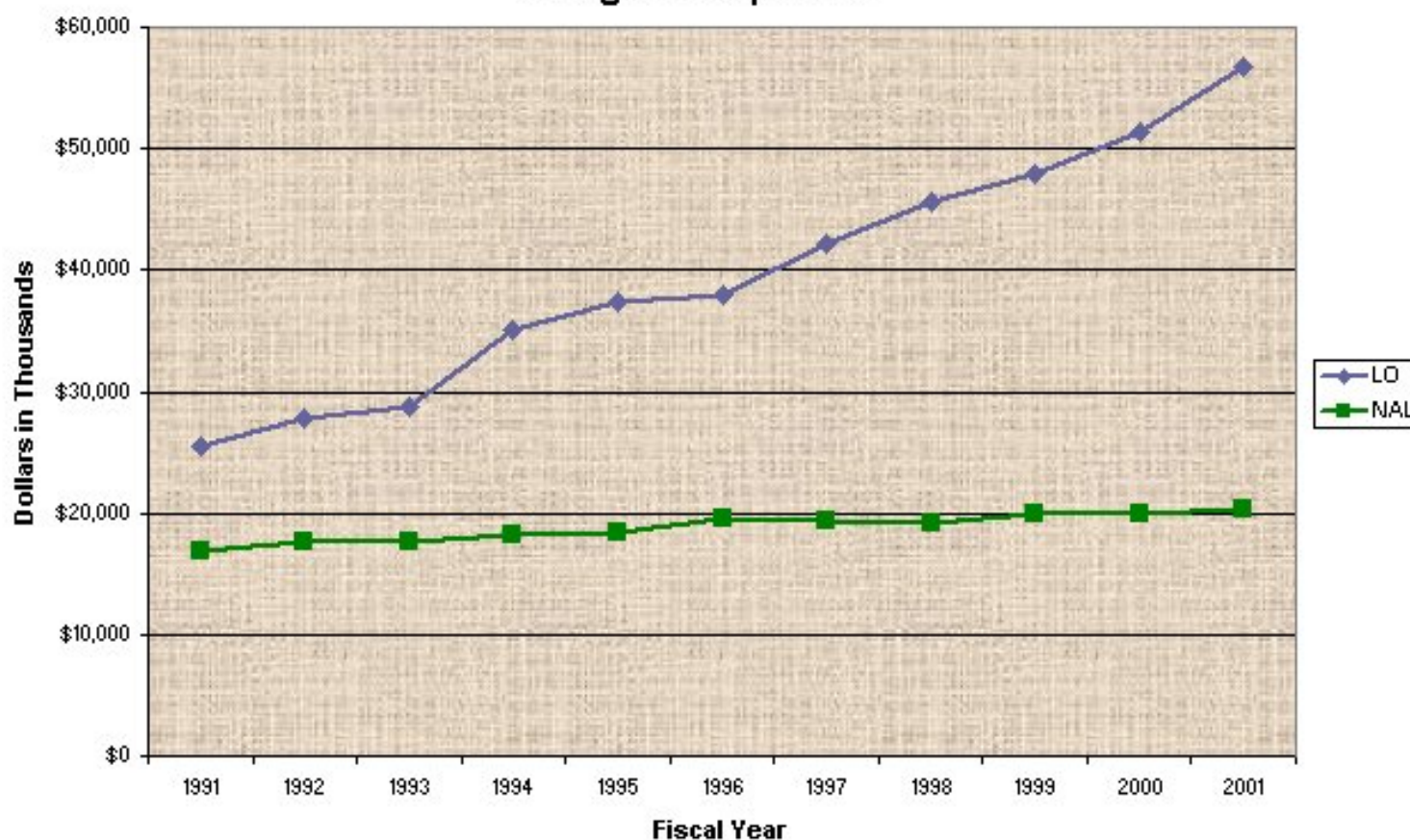
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Appendix U

**Chart 3. NLM, Division of Library Operations (LO) and NAL
Budget Comparison**



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Appendix V

Comparison of Library Services: National Library of Medicine, National Institute of Health Library and the National Agricultural Library

	NLM Library	NIH Library	NAL
<p>Library Services</p> <p>Note: NLM training primarily for librarians; NIH training primarily for end-user.</p>	<ul style="list-style-type: none"> ● Cataloging ● Preservation ● Reference ● Databases ● Document Delivery ● Extramural Funding ● National Library Network ● Publications ● Training and Outreach 	<ul style="list-style-type: none"> ● Online Searching ● Research Updates ● Translation ● E-mail listserv ● Custom services (journal management, clinical liaison, bibliographic databases, Web pages) ● Training 	<ul style="list-style-type: none"> ● Cataloging ● Preservation ● Reference ● Databases / Indexing and Thesaurus Development ● Document Delivery ● Subject focused Information Centers ● Publications ● Training and Outreach ● Current Awareness
<p>Hours of Operation</p> <p>(Holiday and seasonal variation in schedules)</p> <p>*Reference assistance until 8:00 pm.</p>	<p>Mon 8:30 am - 5:00 pm</p> <p>Tue 8:30 am - 5:00 pm</p> <p>Wed 8:30 am - 5:00 pm</p> <p>Thu 8:30 am - 9:00 pm*</p> <p>Fri 8:30 am - 5:00 pm</p> <p>Sat 8:30 am - 12:30 pm</p> <p>Sun Closed</p>	<p>Mon - Thu</p> <p>7:45 am - 10:00 pm</p> <p>Fri 7:45 am - 6:00 pm</p> <p>Sat 8:30 am - 6:00 pm</p> <p>Sun 1:00 pm - 5:00 pm</p> <p>Reference (M-F 8:30 - 5:00)</p> <p>Photo Copy Service (M-Th 8 - 8; F 8-6; S 10 - 5; Su 1- 5)</p>	<p>Mon - Fri.</p> <p>8:30 am - 4:30 pm</p> <p>On-site reference and circulation hours.</p> <p>Closed Federal Holidays</p>
<p>Reference Services</p> <p>in FY 2000</p> <p>*NLM has a single point to process requests, the total includes enquires about products and services.</p> <p>** Circulation requests for documents and books</p>	<p>Total:* 114,427</p> <p>Onsite 51,456</p> <p>Remote 62,871</p> <p>Circulation**</p> <p>Onsite 363,780</p> <p>ILL 390,574</p> <p>**Circulation of Documents and Books</p>	<p>Total: 44,328</p> <p>Information Desk (Reference): 12,617</p> <p>Circulation Desk Information Requests (Call Number Look-up; availability of journals, etc.)</p> <p>31,711</p>	<p>Total: 23,705</p> <p>On & Off-site Mediated Reference Services</p> <p>Circulation**</p> <p>Document Delivery and ILL: 151,841</p> <p>Web-based information delivery (hits): 11,830,876</p>
<p>Materials Budget</p> <p>*FY 00 Budget</p> <p>**Projected FY 01 budget;</p>	<p>Total:* \$5,370,797</p> <p>Serials 4,374,230</p> <p>Books 542,659</p> <p>Non-Print 161,305</p> <p>Historical 292,603</p> <p>Non-Print does not include licencing access to secondary databases. NLM plans to increase licencing for more electronic materials in FY 01.</p>	<p>Total:** \$3,000,000</p> <p>Serials 1,800,000</p> <p>Books 200,000</p> <p>Non-Print 1,000,000</p> <p>Non-Print category includes electronic journal subscriptions and databases.</p>	<p>Total:** \$2,071,000</p> <p>Serials 1,821,000</p> <p>Books 250,000</p> <p>Non-Print See Below</p> <p>Non-Print/electronic publication and database subscriptions are included in the Serials and Book budgets above and are estimated to be approximately \$300,000.</p> <p><i>Correction made to the original report.</i></p>

Customer Base	<ul style="list-style-type: none"> ● Health care providers, researchers, scholars, and students ● librarians and information specialists ● historians of medicine and science ● general public 	<p>NIH library services are only available to current NIH employees</p> <p>Primary audience 6-8,000 currently employed physicians and Ph.D. researchers.</p>	<ul style="list-style-type: none"> ● Federal, state and local government officials ● Researchers, including 2,000 ARS scientists ● Farmers/producers ● USDA administrators, regulators, researchers ● University and college professors, researchers and students ● Agri-business ● Librarians & Information Specialists ● News media ● International agricultural organizations and individuals ● General public ● Congress
<p>Staffing</p> <p>*Staffing figures reported for NLM's Division of Library Operations only. These staffing figures may include contractors</p> <p>**Staffing figures include vacancies for FY 2001.</p>	<p>*Total: 281.46 FTE</p> <ul style="list-style-type: none"> ● Acquire, Organize, Preserve Biomedical Information [Equivalent to NAL TSD, Preservation, and Special Collections] = 174.6 ● Provide Access to Biomedical Information [Equiv. to NAL PSD] = 83.3 ● Increase Awareness & Use of NLM Services Among Health Professionals = 10 ● Increase Awareness & Use of NLM Services Among the Public = 6.31 ● Strengthen the National Network of Libraries of Medicine = 3.6 ● Further Medical Informatics Research = 3.6 	<p>Total: 56 FTE</p> <p>Federal Positions</p> <ul style="list-style-type: none"> ● Translators = 2 ● Information & Education Svcs [Equivalent to NAL PSD, IRSB -- nearly all professional level] = 20 ● Collection Organization & Management [Equiv. to NAL TSD -- 4 librarians] = 8 ● Information Delivery [Equiv. to NAL PSD, DDSB -- 1 librarian] = 18 ● Administrative Staff = 3 ● Systems [Equiv. to NAL ISD -- 3 computer specialists and 2 in-training] = 5 <p>20 Contract Employees: photocopying services, shelving, some pulling, and maintaining the self-service photocopy center</p>	<p>Total: 170.35 FTE</p> <p>Federal Positions</p> <ul style="list-style-type: none"> ● Acquire, catalog, index and thesaurus=67.1 (+2.5 non-Fed staff) ● Document delivery, interlibrary loan, collections maintenance, special collections = 14.5 (+37 non-Fed staff) ● Information research services, reference, specialized information centers, circulation = 37 (+44 non-Federal) ● Information systems, end-user support, systems administrators and engineers, preservation, AgNIC, CALS, systems security, Web management = 32 ● Office of the Director, administration***, public affairs, facilities, personnel, budget, travel = 19.5 (+11 non-Fed staff) <p>*** Provides administrative services for NAL and ARS HQ Program Management</p>
Total Budget Projected for FY 01	<p>Library Operations: \$56,752,000</p> <p>Total NLM: \$230,135,000</p>	\$9,500,000 (includes budget for overhead and space charges ~ \$850,000)	\$20,400,000

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National Agricultural Library Assessment Report

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Appendix W

NLM Long-Rang Planning Process

In 1999, the Board of Regents charged the National Library of Medicine (NLM) Director with preparing a new five year Long Range Plan for the Library. The NLM's Long Range Plan 2000-2005 completes a 20-year cycle for the Library, which has "a 15-year history of successful long range planning that began in 1985."¹ The original plan has been updated throughout the years leading up to the 1999 effort. The success of this ongoing long range planning process can be appreciated with the impact of the National Center for Biotechnology Information, a conceptual product from a planning panel meeting.

The 1985 Long-Range Planning Process

In 1985, the NLM Board of Regents:

- resolved to develop a long range plan to guide the Library in wisely using its human, physical, and financial resources to fulfill its mission . . .
- recognized the need for a well-formulated plan because of rapidly evolving information technology, continued growth in the literature of biomedicine, and the need to make informed choices of intermediate objectives that would lead NLM toward its strategic, long range goals.
- began to develop a 20-year Long Range Plan to guide the Library in using its human, physical, and financial resources to fulfill its mission.²

The NLM planning process was broad-based and directed by the Board. Participants included librarians, health professionals, biomedical scientists, medical informaticians, computer scientists, and others whose interests were intertwined with those of the Library.

More than 70 experts in various fields accepted invitations to serve on one of five planning panels. Each panel addressed the future in one of the following five areas encompassing NLM's programs and activities that provided the framework for thinking about the future

1. Building and organizing the Library's collection
2. Locating and gaining access in medical and scientific literature
3. Obtaining factual information from databases
4. Medical informatics
5. Assisting health professions' education through information technology

The NLM chose a planning model with three components:

1. General vision of the future 20 years hence in medicine, library and information sciences, and computer

communications technology a distant goal societal objective whose achievement requires participation from many organizations and agencies

2. Opportunities for and impediments to achieve the goal (10 years)
3. Specific steps to take to remove impediments and take advantage of opportunities (3-5 years)

NLM staff involvement included:

- Director described his vision of the future, "Scenario: 2005" which was provided to panel members and library staff for comment.
- Library staff prepared background documents on NLM achievements in the five domains, and reviewed current planning
- Senior NLM staff members also acted as resource persons to the planning panel.

The planning process ended with a report of each panel's recommendations and priorities for future NLM programs and activities in the five domains under its purview. The NLM staff analyzed and reconciled their findings, eliminated duplication and consolidated the recommendations. The final synthesized report was adopted and published in 1987 as the NLM Long Range Plan.

The 1999 Long-Range Planning Process

The Board of Regents recognized the dramatic changes occurring in the societal and technological landscape in which the NLM operates. This landscape led the Board to develop a strategic plan for the Library. The first step in the 1999 planning process was to evaluate the impact of the original Long Range Plan. Recommendations that were substantially accomplished and those requiring additional attention or redirection³ were identified and summarized. The summary was published in The NLM Track Record. ⁴

NLM sent The NLM Track Record to more than 250 past planning panel members and other advisors for comments and posted the Track Record on NLM's public web site. More than 100 individuals provided comments which the NLM Board of Regents asked NLM staff to incorporate into priorities for a new draft five year Plan. A broadly representative group of NLM advisors reviewed the draft in December 1999.

The NLM Long Range Plan, 2000-2005 is organized into four broad goals that have eleven objectives and more than one hundred specific program plans. The Plan "is a map of the future and a set of opportunities that awaits NLM action and program development." ⁵ It is not a fixed sequence of steps to accomplish stated goals and objectives that typically characterize such plans. The Board of Regents and the NLM will develop operational plans within resource limitations.

Goal 1 focuses on ongoing emphases on providing basic library services. Goals' 2-4 addresses the Library's highest priority new initiatives for special emphasis as follows:

- health information for the public
- molecular biology information systems
- training for computational biology
- definition of the research publication of the future
- permanent access to electronic information
- fundamental informatics research
- global health partnerships

The NLM Long Range Plan, 2000-2005 resulted from the work of many advisors, colleagues, friends, Board members and NLM staff.

Summary

The NLM Board of Regents began a visionary process for the Library through strategic long rang planning. The planning process helped crystallize an organizational mission and goals which in turn set NLM's priorities and direction. The 1985 effort began from the starting point of extant programs and services, the foundation from which it was able to begin the process of creating the future. The successful vision was created through broad involvement of current and future customer representatives and the NLM staff. The ongoing nature of the planning process captured important new trends in biomedical information management and customer needs. NLM was able to capitalize on these trends through leveraging major assets (i.e., its collection). These assets had been identified and enhanced throughout the original planning process.

References

The following documents are available in full-text on the NLM Web-site at <http://www.nlm.nih.gov/pubs/plan/>.

1. National Library Medicine Long Range Plan. 2000-2005. Report of the Board of Regents, National Library of Medicine. Bethesda, Md: National Library of Medicine, 2000. [Pre-pblication version October 2000.]
2. Long Range Plan of the National Library of Medicine: Report of the Board of Regents (1987).
3. National Library of Medicine Long Range Plan. The NLM Track Record.
4. Ibid.
5. Ibid.

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Appendix X

NAL's Technology Plan
Executive Summary and Update
October 2000

In May - June 1998, a Technology Plan for the National Agricultural Library was drafted and presented to the Management Team. The purpose of this Plan was to evaluate current and projected information technology (IT) and systems needs. The Plan also presents a systematic approach for dealing with the rapidly emerging and expanding IT field as it relates to the NAL mission.

In preparation for writing the Technology Plan, Information Systems Division staff attended a workshop sponsored by Computers in Libraries which addressed the specific topic of technology planning. Automation and technology plans prepared by similar organizations were evaluated to gather information about methods of preparation, successful planning, life cycle of planning, and results of planning. The Information Technology Branch brainstormed to identify the IT areas which required attention and proposed solutions and recommendations as appropriate. Future needs were addressed in these recommendations.

The Technology Plan includes a historical account of computers and information technology at the Library, the state of information technology and information management in 1998, future directions anticipated for both, and recommendations for the NAL's Management Team.

Since 1998, significant accomplishments at NAL have been made in the information technology arena. Some of these accomplishments were cited as goals in the 1998 Plan and others have occurred through the introduction of new program initiatives. Specifically, we have:

- Upgraded the NAL Infrastructure with a new Cisco 5509 core switch which provides us with additional capacity to support dedicated bandwidth to the computer room servers as well as to wiring closets. Upgraded wiring closets to 100 MB switched to the desktop to provide dedicated bandwidth.
- Increased remote access capabilities for staff by expanding access to include the LAN file server, upgrading our modem pool, and implementing an 800 number. Implemented Microsoft Outlook Web Access to permit e-mail access across the Internet for the NAL staff.
- Improved NAL's information systems security posture by contracting for a thorough security assessment, implementation of a firewall, and draft of information systems security policies and procedures.
- Migrated to Windows 95 operating system and Exchange/Outlook which is an email and scheduling package providing greater functionality for staff.

- Fully established the Electronic Services Center (formerly known as the Electronic Media Center) file server and workstations.
- Contracted for a thorough evaluation of environmental conditions of our Data Center.
- Developed incident prevention and response to computer virus attacks.
- Implemented servers in support of various initiatives including FSRIO, FNIC, AgClass, and Invasive Species.
- Developed document citing technical issues for a new Library Management System.
- Instituted a cross-training program for system administrators.
- Established a Test Lab for prototyping new technologies and applications.
- Evaluated network attached storage concept for future use at NAL.
- Implemented Dynacom 3270 terminal access to the National Finance Center in place of the X25 modem access.
- Upgraded computer projection systems in the Conference Room and Training Room.
- Improved our procurement of computer workstations by the selection of another vendor and configuration standardization. Evaluated life cycles for NAL workstations.
- Successfully transitioned to Y2K.
- Implemented a 24 x 7 coverage for computing resources.
- Implemented AGRICOLA on the Web through a web gateway to ISIS records.
- Continued to evaluate and restructure as necessary our computing resources and develop annual information technology goals.

Our specific IT objectives for FY 2001 include: evaluation and possible implementation of a new library management system; Internet bandwidth expansion; automated help desk; renovation of the Data Center; implementation of new listserv software; further evaluation of network attached storage concept; institutionalizing life cycles for both microcomputers and servers; exploring new technologies including virtual private networks, wireless LANs, firewall high availability, gigabit speed uplinks from wiring closets to core switch, videoconferencing; implement faster remote access to our network, automatic emergency shutdown on all servers, additional network upgrades.

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NAL'S Technology Plan

History and Introduction

In 1993, it was recognized that fundamental changes in computer strategies were taking place, specifically increased use of computer solutions for recording and disseminating information. This recognition prompted the formation of the Electronic Information Initiative (EII) team to thoroughly evaluate, investigate, and recommend appropriate actions and directions for the Library to take to align itself with emerging and future technologies. The final report contained significant information and recommendations for the Library.

In part, the EII Report recognized that the Library must make significant investments in information technologies needed to collect, organize, store, and disseminate electronic information. Today, more than ever, vast amounts of recorded information are being made available in both print and electronic format. Many resources are now only available in electronic form. In order to provide access to these resources, libraries need to

offer electronic services to supplement the traditional print services. Coupled with this trend, are the increasingly sophisticated needs of our customers. These needs will translate into expectations for more timely delivery of information in a wider diversity of formats. The expansion of our information services is vital in meeting the present and future needs of our customers. Toward this end, in February 1994 an NAL Information Alert announced that the NAL in its commitment to becoming an electronic library, has adopted electronic information as the "preferred medium" for library materials.

The evolution of the World Wide Web (WWW) during the last decade has a momentous impact on society worldwide. For the Library environment, the WWW enables access to and dissemination of electronically recorded information more extensively and effectively than ever before. As noted in the WWW Policy and Guidelines of the NAL, the Web is "an increasingly attractive and effective dissemination channel for federal agencies."

In reaction to the EII Report and the WWW evolution, NAL prepared a document entitled Policy and Guidelines on Electronic Communication, dated September 20, 1994. This document discusses the importance of the use of electronic communication and how the use by NAL strengthens NAL's role and enhances NAL's image as an active member of the electronic community.

The early 1990's also witnessed the NAL's strategic planning process. Beginning in 1993, an environmental examination was conducted to determine our stakeholders and customers as well as internal and external factors affecting the agency. During this phase we restated our mission, articulated core values, and created a vision. NAL's vision holds firm the direction of NAL in the information technology arena.

"The National Agricultural Library leads in the information revolution by forging partnerships and exploring new methods and technologies that advance open and democratic access to information. As a dynamic, efficient, and effective organization, we are dedicated to the delivery of information to customers worldwide. The staff sets and maintains the highest standards of excellence in information services. As keepers of our Nation's agricultural legacy, we preserve and protect information for future generations.

"We are a multicultural and diverse organization. Decision-making and accountability are shared, creating an environment that is vital, challenging, rewarding, and enjoyable. Our work makes a difference--it enriches the lives of people everywhere."

These important events, the EII, evolution of the WWW, and NAL's strategic planning, have laid the foundation on which to design our technology plan. Realizing the value of participatory decision-making, an internal NAL partnership will be formed and each unit will contribute its unique measure to the final composition of our technology plan.

Scope of The Technology Plan

This Technology Plan is guided by the mission, values, and vision of the Library . More specifically, this plan serves as a blueprint to enable Library activity which "ensures and enhances access to agricultural information for a better quality of life." Not a unique document nor the beginning of planning at the National Agricultural Library, this document can be viewed as a continuation of the Electronic Information Initiative Final Report.

Information presented is for planning and to alert management to the current status of our technologies. Information and recommendations are based on today's computer technology and it is understood that some technologies in this plan may be obsolete or superseded before they can be implemented. Rapid information technology changes necessitate periodic updates. However, long range planning is necessary to ensure continuity

and direction while allowing for flexibility to accommodate the introduction of new and innovative technologies and services. We need to continually monitor and respond to the various trends and emerging developments in library practices.

The focus of this plan will be computer technology and management including hardware, software, networking, servers, website management, fax machines, telephones (as they relate to voice over data networks), and electronic databases. Facility operations such as telephone, photocopiers, independent fax machines, voice mail, and environmental controls will not be addressed.

Computers, networks, and other information technologies are important working tools for our staff and important tools for providing information to our patrons. A successful technology plan is not just one of procuring bigger and faster systems but an intricate plan of what technologies we have a need for and of how our various technologies and systems interconnect. We must select technologies appropriate to the application needs and to the information to be delivered. The importance of collecting users requirements and conducting needs assessments cannot be overemphasized. Performing these evaluations assist in avoiding costly implementation for unnecessary or poorly performing technologies. We need to examine carefully what we really need. Conducting an in-depth analysis of technology needs is part of the large technology evaluation effort. Historically, implementing technology for technology's sake without regard for how the use of technology will be integrated has failed. A technology needs assessment is more effective when the analysis is based on actual goals and available resources.

Technology itself doesn't provide value to our customers. It is the NAL staff who uses technology and who assist our customers that makes the difference. Training and cross-training programs will be critical in maintaining an informed and competent library staff. New technologies, services, and resources must be effectively communicated to the public, USDA, and other government departments to increase awareness, use, and support for the NAL.

State of Information Technology at NAL

This section addresses the state of information technology at NAL. Since the release of the EII Phase II Report, many technological advances have occurred. While some EII recommendations are current, others are not. The status of the EII recommendations is provided in Appendix A. Initiatives recognized or developed since the report are included to provide the reader with a comprehensive report of information technology.

The NAL Infrastructure

The ever-increasing needs to communicate more effectively and work together more efficiently were the fundamental forces behind the planning and implementation of the NAL building-wide network. Planning began in the late 1980's/early 1990's when LAN technology began to achieve widespread acceptance, and the Internet was still in its infancy.

One of the early milestones of the NAL infrastructure is the 1989 installation of a T1 connection to SURANet, a major Internet Service Provider. This connection provided NAL with Internet capability to support a document delivery image transfer project with North Carolina State University. Several years later, in 1993, the building's fiber-optic backbone was installed, along with a modem rack, terminal server, and e-mail server. The wiring of the NAL building continued throughout 1994 and 1995, as twisted pair network cabling was installed between users' desktops and wiring closets located at strategic points throughout the building. These wiring closets contained equipment which allowed the twisted pair wiring to be connected to the building's fiber-optic backbone.

During FY 1996, NAL continued to expand its networking capabilities. The backbone networking equipment was upgraded to enable users to access network resources at higher speeds than in the past. This upgrade took place in several stages. Stage one consisted of an upgrade to the core networking equipment. The upgrade was purchased in FY 1996 and installed in FY 1997. It consisted of the installation of a backbone switch and converting the network backbone from a hybrid switched/routed environment to a purely switched configuration. This change has resulted in a decrease in network congestion and a corresponding increase in network throughput, bandwidth availability, and performance. The next stage of the network backbone upgrade plan will consist of upgrades to the network equipment located in the wiring closets throughout the building. Specifically, the shared hubs in the wiring closets will be replaced with Ethernet/Fast Ethernet switches. This change will increase the bandwidth available on the backbone and to the desktop. This change is expected to take place beginning in FY 1998, subject to available funding. Necessary wiring modifications as a result of the renovation are not known at this time.

To support state-of-the-art monitoring and service for the NAL Infrastructure, implementation of an NAL Network Operations Center took place in FY 1997. The center is dedicated to monitoring and managing the NAL backbone network. This project consisted of the purchase of hardware and software that allow for remote monitoring and management of all critical network resources from a single, centralized site.

Network Architecture Overview

NAL's building-wide network is a classic collapsed backbone architecture, consisting of a series of bundles of 12 fibers running between the computer room and network hubs in wiring closets throughout the building. This type of network design allows a great deal of flexibility in the configuration of the network. Initially, all segments of the building backbone were connected to a series of network concentrators located in the NAL computer room. These concentrators were connected to a router, which allowed for communication between the various network segments, as well as a gateway to the Internet via the T1 connection to SURANet.

The network backbone equipment has undergone several stages of modernization since the initial implementation of the building network. The original router has been replaced with a later generation model capable of increased performance. In addition, other backbone networking equipment was upgraded to enable users to access network resources at higher speeds than in the past. The network core function was migrated from the original router to a Fast Ethernet switch, allowing high-speed interconnections between hubs in building wiring closets and servers located in the computer room. Ethernet switches are beginning to be deployed throughout the network as well, in order to reduce network congestion and improve overall network responsiveness.

NAL's network consists a fiber-optic backbone connecting wiring closets on most floors of the building, a Catalyst 5000 FastEthernet switch tying together all of the wiring closets throughout the building, an X.25 (to be upgraded to a Frame Relay) connection to OCLC, a 10 Mb connection to the BARC backbone (which provides SMDS connectivity to the USDA network), and a T1 connection to the Internet. The wiring closets contain Ethernet hubs, for the most part. Recently one FastEthernet switch was deployed in ISD with excellent results. The hubs are now connected to the Catalyst 5000 FastEthernet switch, which in turn is connected to the router. The router is a Cisco 4500 upgraded from the older model Cisco AGS+.

Appendix B provides a graphical representation of the NAL Infrastructure. Appendix C is the detailed plan of action and milestones for the Catalyst 5000 integration.

USDA Internet Access Network

NAL has maintained a continuous Internet presence since the installation of its T1 connection to SURANet in

1989. This connection predates nearly every other Internet connection in the Department of Agriculture, and is more established than the USDA Internet Access Network (USDA IAN) by more than three years. In 1993, the predecessor to USDA's OCIO established a Department-funded-and-managed connection to the Internet via USDA's Technical Services Division in Ft. Collins. This was followed up by a proposal to improve service and allow increased redundancy by creating an east coast node for the USDA IAN. This was originally proposed to utilize NAL's existing Internet connection and connect NAL to the USDA South building via a dedicated leased line. This proposal was never implemented, and the USDA IAN east coast node was placed at the USDA South Building complex.

NAL continues to manage its own Internet connection instead of relying on the USDA IAN for a variety of reasons. These reasons include concerns about quality of service, a requirement for around-the-clock (24 x 7) monitoring on both ends of the connection, and insufficient bandwidth capacity of the Internet link.

BARCNet and ARSWAN

In 1996, NAL connected its network to the Beltsville Agricultural Research Center's FDDI (fiber distributed data interface) backbone (BARCNet), allowing higher-speed access between NAL and systems located throughout BARC. This connection initially consisted of a fiber cable between NAL's backbone router and a port on the GRIN network located in the NAL computer Room. In FY 1997, this connection was reconfigured to hook directly to a BARC backbone switch, thus making NAL a true node on the BARC backbone. NAL's connection to the BARC backbone also serves as NAL's link to the ARS Wide Area Network (ARSWAN), which interconnects all eight ARS administrative areas via a series of Frame Relay links.

In addition, NAL serves as the connection point to the BARC backbone for the Livestock and Poultry Sciences Institute, located in building 200, via an AirLan located on the NAL roof. This BARC connection allows all of BARC to use NAL's Internet gateway and enabled an independent circuit, from the BARC network to the Internet, to be shut down. Savings are estimated at more than \$15,000 in FY 1997. The BARC backbone connection also provides NAL with a connection to many USDA networks via a BARC-managed Switched Multi-megabit Data Service (SMDS) connection which connects several BARC-affiliated research sites throughout the Washington metropolitan area. Appendix D is a graphical representation of the BARC ARS Backbone Network.

OCLC Network Connectivity

During 1996, NAL converted its geographically-limited dialup OCLC access to a shared X.25 link, accessible to all computers with an NAL network connection, including those using the dialup modem pool. Previously, access had been limited to only OCLC-configured computers connected to a series of concentrators located at several points throughout the building, or to direct, expensive dial up. This type of service was eliminated in favor of the X.25 solution due to its more economical cost and expanded coverage.

NAL-wide Windows NT Local Area Network (NT LAN)

NAL began the planning and prototyping process for a building-wide local area network in FY 1996. The process consisted of meeting with end users to determine requirements, researching possible products and applications, prototyping solutions, and purchasing production-level servers. The servers were received, set up, and configured in 1996. In addition both personal directories and directories accessible to multiple groups were set up on the servers. The first applications were loaded, resources were configured for sharing across the LAN, and user accounts were set up. The planning process is fully detailed in Appendix E.

NAL's Local Area Network (LAN) is centered around Microsoft's Windows NT Server currently running

version 3.51 on two Compaq Proliant backbone servers, dedicated to file and printer sharing applications. These machines have disk RAID capability for reliability in case of a single disk failure. In addition, system components are monitored for fault detection prior to failure, to allow a component to be swapped out before it fails.

The servers are in the process of being upgraded to Windows NT Server 4.0. In addition, a third server is being brought on-line to provide for an automatic failover if either of the two primary servers should experience a catastrophic failure. In addition, a Windows NT-based tape backup solution for NAL's NT servers is reaching production status, and will be used to provide both on-site and off-site backup sets for use in disaster recovery operations.

A complete suite of server-resident applications has been installed on NAL's NT servers, including the CorelSuite of applications (WordPerfect, Netscape, Quattro Pro, etc.) as well as Lotus 1-2-3, InForms, WinSPIRS, Hot Dog HTML editor, Adobe Acrobat, Passport for Windows, MultiTes, Thomas Register database, a 3270 emulation program for access to the National Finance Center's (NFC) Online Travel system, and Cataloger's Desktop. Some of these applications have been installed to be used in conjunction with a software license metering scheme. Software license metering allows for a reduction in the number of licenses to be purchased to support the entire library, since licensing is based only on the number of simultaneous users of any particular application. Thus, it is possible to achieve greater efficiency in the use of budgetary resources. These applications installed on NAL's NT servers benefit the entire library in general, but also many individual units within the library whose specialized applications have been made available in ways not possible before the installation of the LAN. Also during 1997, many units were set up to use network printers available via the building backbone. This allows many users to easily and transparently share printing resources located throughout the library, thus generating reduced operating costs and improving efficient use of computing resources. Appendix F is a list of all server applications available to NAL staff.

All LAN users have access to both shared and private disk space on the servers. Users are currently quota-limited to 10 Mb per user, but exceptions can be made on a space-available and as-needed basis. A software package monitors current disk quota usage and prohibits disk usage beyond the pre-established quota. Shared disk space on the servers has been organized along NAL organizational lines, and access privileges and permissions are set at the branch or division level.

A number of network management packages have been installed to allow for more efficient support of the NAL network. These include Norton Administrator for Networks, which is used to provide 1) software license metering, 2) remote software distribution, and 3) software and hardware inventory of all LAN clients. The Cisco Works for Switched Internetworks is used to simplify management of NAL's routers and switches. Cabletron's SPECTRUM Element Manager is used to manage the hubs located in NAL's wiring closets. Compaq's Insight Manager monitors the Compaq servers for hardware and system reliability. Finally, Windows NT Server has a variety of tools available for monitoring server and network performance.

The installation of the USDA-NFC On Line Travel system was also coordinated. This system allows for more efficient processing of both local and TDY travel. The results are a quicker resolution of outstanding travel claims which generates savings to the government.

Windows 95 Deployment

In early FY 1998, ISD developed a deployment plan for Windows 95 at the Library and opened up a test lab for the purpose of testing the functionality of NAL's current suite of software under the Windows 95 operating system. Users were encouraged to use the lab to familiarize themselves with the Windows 95 user interface and load their own applications for testing. The test lab provides the opportunity for staff to see what their new desktop will be like once Windows 95 is deployed.

The deployment schedule for Windows 95 begins in mid-April 1998 and will continue through the summer. Careful coordination of training and deployment plans was scheduled so that each user will receive hands-on training while the new operating system is deployed on their workstation. In that regard, there will be no lag time between training and actual use of Windows 95. Appendix F provides details on the Windows 95 Implementation Plan and the Windows 95 deployment plan.

Unix Servers, Electronic Databases, and the World Wide Web

Unix servers have been installed at NAL to support both the user community, the Electronic Information Initiative, and NAL's position on the World Wide Web. The first major server was NAL's e-mail server, which was installed during 1992. This was followed by the setup of NAL's gopher during the summer of 1994 which has since been shut down in December 1997 due to technology changes. That server represented NAL's first foray into the arena of providing information to patrons and the general public via the Internet. The NAL webserver was brought online in April 1995, marking NAL's entry into the World Wide Web. NAL's USENET news server was also established in early 1995. The USENET server allows NAL users to read and post news articles on a variety of USENET groups. In addition, the news server allowed the establishment of several local newsgroups to be used for local discussions on a number of topics. The local newsgroup capability improved the distribution of NAL's monthly reports by allowing reports to be posted and read electronically, eliminating the paper copies, and making reports available in a more timely manner than in the past.

In FY 1996, a new solution for backup of network servers was installed. The solution consists of network accessible tape drives and a tape library with network backup software. Backups are provided of all NAL's multi-user, mission-critical, server-based resources. Also in FY 1996, a majordomo list server was established. This provided the capability for user-maintainable mailing lists for both onsite and offsite users.

The beginning of calendar year 1997 set in motion the Electronic Media Center (EMC). Two Unix servers dedicated to this initiative have been purchased and setup. These servers provide access to a variety of agriculturally-related databases, including AGRICOLA, and to the Library's electronic archiving and publishing programs. Prototypes for NAL's implementation of the OCLC Site Search package and several ARS-produced databases were also developed on these systems. Available databases to date are listed in Appendix G. At present, there are 22 Unix systems serving the mission of the National Agricultural Library. The servers and their functions are listed in Appendix H.

Also during FY 1997, Unix system administrators planned the redesign of the computer room to accommodate additional equipment and they developed a new, comprehensive set of computer room emergency response procedures. All Unix systems will be relocated to the computer room which is a locked facility with sensing devices to alert administrators to changes in temperature and humidity.

When the concept of web servers and webmasters was in its infancy, the responsibility of a webmaster called for a technical person to oversee the development of the server and various applications. There has been an evolution in a webmaster's responsibilities in other organizations as well as at NAL. Since many of the initial technical issues have been overcome and industry standards are in place, the webmaster now needs to serve as a content expert rather than a technical expert. In early 1998, the NAL's webmaster position made the transition from technical to content. Appendix I provides the responsibilities and qualifications for the NAL Webmaster and Appendix J is the charter for the Web Management Team.

Information Technology Training

At this writing, the NAL computer training program is going into its 8th year of having an onsite computer

instructor. The focus of the training program is to provide staff with hands-on instruction for microcomputer and Internet applications. Training classes are scheduled regularly for a variety of subjects and range from short one-hour sessions to all day workshops. The training room consists of ten student multimedia Pentium workstations and an instructor's workstation. Ten new classes were developed for NAL staff during FY 97 including course titles such as Introduction to HTML, Netscape: Bookmarks, AltaVista and Yahoo!, and Lotus 5.0 Working with Multiple Worksheets. In FY98, a considerable amount of time has been spent developing three customized training classes for Windows 95.

An NAL webpage, URL: www.nal.usda.gov/training, was developed for the exclusive use of NAL staff. This webpage provides detailed information on course content and schedules. Part of the webpage is specific to the Windows 95 deployment. Of great value is the newly established Frequently Asked Questions for Using Windows 95.

Groupwise

In 1997, in an effort to increase communication between ARS and NAL administration, steps were taken to add NAL management to the National Program Staff (NPS) domain within the GroupWise electronic mail system. This enables all ARS locations that use GroupWise to seamlessly add members of the NAL management team to messages and eliminates the need of each location to establish this group locally.

Remote Access

As an ongoing initiative, ISD staff evaluates issues involved with remote access and implements technology as needs dictate and resources permit. Initially, NAL's dial up capability consisted of an integrated rack of 10 V.32bis (14.4 kbps) modems connected to a terminal server. This system was used for terminal (VT100) access to NAL's e-mail server via a telnet session. Later, in 1995, a software package was installed on the e-mail server to allow pseudo-SLIP connections to be established, thus granting true Internet capability to dialup users. This step was followed by a modem pool and terminal server upgrade in 1997 that allows up to 16 simultaneous V.34 (33.6 kbps) connections and true SLIP/PPP dialup capability without the use of an intervening software product. Specifically, a bank of 16 integrated V.34 modems and a new terminal server were installed to allow users to connect to NAL's network using either SLIP, PPP, or a terminal-based communication package. This project allows seamless connectivity to many of NAL's network resources, regardless of where the user is located - on site or remote via a dial up link.

Remote access to NAL resources is divided into three areas 1) remote access via a modem and NAL's modem pool (modem access), 2) remote access via the Internet (Internet access), and 3) remote access via a USDA-managed network (USDA access).

Modem access: Currently NAL staff has remote access to all authorized SilverPlatter electronic databases (both at NAL in Beltsville and at SilverPlatter in Cambridge, MA) via a WinSPIRS client, ISIS (via telnet and/or web), email (via telnet and/or a terminal session), USENET news (via NAL's news server), and the entire Internet (via a SLIP or PPP connection). This access is made possible by a remote access solution consisting of a terminal server and 16-port V.34 (33.6 kbps) modem pool that was deployed in July 1997. The terminal server is configured to allow clients to set up terminal sessions (for telnet to cliff only) and SLIP or PPP sessions (used for accessing IP-based resources, like the Internet).

When the remote access solution was announced, ISD prepared an instruction sheet on configuring a Windows or Windows for Workgroups client for remote access. In September 1997, ISD prepared an instruction sheet on configuring a Windows 95 client for remote access. Both of these are available on the S: drive in the S:\NAL\DOCS\LIAISON directory. In addition, ISD always expresses willingness to assist users with

configuring computers for remote access and has configured computers for users on numerous occasions.

Internet access: From an Internet-connected machine at a remote location, NAL staff can access the following: e-mail (via telnet), plus any IP-based resources (web server, ftp server, other IP-based servers). Access to these resources is currently secured only by a cleartext (i.e. not encrypted) username and password, or by anonymous access to the web and ftp servers.

USDA access: At the present time, staff access to NAL's resources via a USDA-managed network is nearly identical to Internet access (with some exceptions for DCRC). This can change as the USDA Enterprise Network takes shape, and security policies and procedures for interconnected USDA networks come into being. Appendix K provides a list of resources currently available as well as a graphical representation of the various types of access. In the section of this document entitled "Future Information Technology Directions", information is detailed concerning the expansion of remote access for other electronic resources.

Microcomputers

Microcomputers as work tools were first introduced at NAL in 1985. They are now the main work tool for NAL staff and provide the means for accessing the Internet, working with software applications, providing document delivery, indexing, cataloging, serving acquisitions/serials needs, and as a need to conduct administrative tasks. The first microcomputers received were IBMs with 8088 processors, two floppy drives and 1200 baud modems. There were no hard drives or high density drives available on the market. The first operating system was DOS 1.1. Since that time, there have been remarkable strides in computer technology and a tremendous proliferation of microcomputers at NAL. Presently, NAL has approximately 500 microcomputers ranging in configuration from 386s to Pentiums, 8 Mb to 64 MB of RAM, and 160 MB to 4 GB hard drives.

On April 3, 1998 the USDA issued Departmental Notice 3120-1 "Technical Standards Architecture". This document is provided in Appendix L and details the minimum specification for all personal computers and laptops that are purchased by USDA agencies. NAL uses those requirements when purchasing all microcomputer and laptop orders.

Future Direction of Information Technology

This section specifies information technology issues that must be addressed in the near future. While many technology issues exist, there are four major issues that are recognized as immediate priority initiatives. They are a new email and scheduling package, remote access expansion, development of an NAL Intranet, and a security assessment of our computer systems. These four issues are in various stages of planning and implementation and the status is addressed in each individual section. Along with these major issues are many other topics that need to be addressed, evaluated, and prioritized by the Management Team. Those topics are also defined in this section.

New E-Mail and Scheduling Package

Our present email system and scheduling packages no longer meet the complete needs of NAL staff nor do they even begin to compare with the functionality of current packages available on the market. Recognizing this need, ISD collected requirements from the user community in February 1998 and developed technical requirements. ISD then evaluated several software packages against user and technical requirements. Specifically, they evaluated Eudora Pro's Email and Planner, Meeting Maker, Netscape's email package, and Microsoft Exchange.

Microsoft Exchange is a messaging system which has both email and scheduling as well as other utilities.

Exchange met all of the user's requirements as well as the technical requirements. Of particular importance is the need at NAL for integrated application suites. Exchange meets this need by its compatibility with our existing LAN. It will provide greater functionality and interoperability with other applications than we currently have available, and it is extremely user friendly. For those reasons, Exchange was selected for our new email and scheduling package.

The next steps are to purchase hardware and software and plan the implementation. This process is expected to take about six months and will begin in September 1998.

Remote Access Expansion

A growing need is being expressed for expanded remote access to resources, such as the S and U network drives, LAN-based databases such as the EMC's Thomas Register, Acquisition's dBase, Indexing's Multites as well as the ISSN database and Cataloger's desktop application. This is in addition to any LAN-based packages used by the entire library, such as WordPerfect, Lotus, etc.

While it may be technically feasible to provide access to some of these resources with existing equipment and some effort on the part of ISD, there are many important issues involved with a comprehensive solution for remote access. These issues need to be resolved before any changes to the current remote access capabilities can be effectively and safely implemented. Issues that require evaluation are listed in Appendix M. Expansion of remote access is considered a major project for ISD staff making it ideal for the first session of the Management Team's analysis which is addressed in the "Recommendations for NAL Management" section of this document.

Intranet

One of the many types of networks being explored and implemented throughout government and the private sector is an Intranet. An Intranet can be defined many ways but basically is an network internal to an organization that uses TCP/IP protocols and Web-based tools. In order for NAL to intelligently evaluate NAL's needs for an Intranet, the Associate Director of Automation requested that an on-site seminar be provided to his staff to educate them concerning an Intranet in a library setting. To this end, McQueen Consulting was contracted to provide an all-day seminar entitled Building the Corporate Intranet Knowledge Center. Topics included a basic introduction to Intranets, how to build a successful Intranet, document management systems, search engines, thin client technology for accessing databases, firewalls and security, as well as many other topics. The presenter, Howard McQueen, has been devoted to library-related technologies since 1986. He is the CEO of McQueen Consulting, a Baltimore-based company, that designs, implements, and supports new and innovative Intranet and management-based technologies.

In addition to ISD staff, the Web Management Team, Branch Heads, and NAL Management were invited to attend. The seminar provided a comprehensive foundation of knowledge on which to make future decisions concerning an Intranet at NAL. The next step is to determine the priority of an Intranet Implementation Project at NAL. It is recommended that the Web Management Team take the lead for this project.

Security Assessment

In order to secure our computing resources and data at NAL, the Associate Director of Automation requested that a security assessment be conducted. This security assessment will determine the vulnerabilities of our systems and appropriate measures that need to be put in place in order to safeguard data integrity and to protect networks and services from the "hacker community", human error, and white-collar crime. The onsite security assessment will be conducted by an independent company and the resulting report will include the methodology used to conduct the assessment, a detailed description of NAL's network and systems, an assessment of

vulnerabilities and risks including risks with current and proposed network configurations and administration, recommendations for correcting vulnerabilities and limiting risks, recommended security policies, and a recommendation for a firewall.

A statement of work for the security assessment was submitted to procurement in early May 1998. The award was given to Network Associates, Inc., formerly Trusted Information Systems, Inc. The onsite survey and evaluation will begin in June and will include interviews with ISD technical staff as well as end users and management. An important outcome from this assessment will be specifications for a firewall. It is now a USDA mandate for all USDA organizations managing or controlling Internet access points or gateways to make provisions to have these access points and/or gateways protected by a firewall. The procurement of the firewall will be an immediate step after the security assessment is accomplished. This initiative is a high priority for ISD.

Anonymous Email

There have been several requests to allow the use of anonymous email from the public microcomputers in the EMC and Reference. An official policy needs to be developed concerning anonymous email and research needs to be conducted periodically for ways to provide this service without the present security risks.

OCLC Dedicated TCP/IP Implementation

This project will consist of the necessary routing, filtering, and other hardware and software configuration changes to be made to NAL's systems in order to connect to the new OCLC dedicated TCP/IP router, to be installed sometime during 1998.

ARIEL

New aspects of this ongoing project include operations of the ARIEL software in Windows 95, testing and installation of an ARIEL machine for the USDA National Arboretum, new scanner/hardware testing and support.

EMC NT Server

This project involves developing specifications for a server to run Windows NT for the EMC, providing support for the installation and configuration, and ongoing maintenance and management of the server. The server will be used to house various EMC-related applications, as well as shared data and other databases intended for use by walk-in patrons. It is required in order to physically and logically separate the internal NT servers, intended for NAL staff use only, from a server to be assessed (and potentially probed, hacked on, and disabled) by the general public. This project will also investigate methods for securing the workstations assessed by walk-in patrons against intentional or unintentional damage.

RIC Server Upgrade

This project involves providing assistance to the Rural Information Center as they look for a replacement for their current CRIS database. It would include: setting up RIC-purchased software, installing Windows NT Server, and providing technical input and assistance as necessary in choosing/developing a new database solution. Some possibilities would include an easy-to-use front end, connecting to a robust back end database, such as SQL server or some other database.

Centralized Procurement of Hardware and Software

This project will involve an analysis of the spending trends for hardware and software throughout NAL and a

recommendation for combining all hardware and software budgets for an equitable distribution of equipment.

Systems Engineering Initiative

This is an ongoing project dedicated to system administration of Unix servers and workstations. System Administration Standard Operating Procedures were developed in 1997 to provide the framework for administration of all systems.

Network Management Initiative

This ongoing project seeks to find new ways to allow for more efficient management of NAL's backbone network. Currently, it consists of various monitoring consoles running different applications, such as Compaq's Insight Manager, CiscoWorks for Switched Internetworks, Cabletron's SPECTRUM Element Manager, and others. A copy of Microsoft's Systems Management Server (SMS) needs to be purchased in order to provide access to a more fully-functional version of the Network Monitor product included with Windows NT Server 4.0 and a copy of SQL Server needs to be purchased in order to enable the fully functionality of the CiscoWorks package. Currently, the long-term trending analysis capability, necessary to view and analyze long-term trends on NAL's network, is disabled. SQL Server is required to activate this functionality. Both SMS and SQL Server are a part of the Microsoft BackOffice 4.0 Suite.

New NAL DNS

This project will include investigating new methods for running various naming services at NAL. This will include DNS, DHCP, an integrated DHCP with dynamic DNS updates, plus a new naming scheme for network resources at the Library. The current naming scheme does little to provide information to those responsible for troubleshooting on the network. A newer scheme containing more informative names for network resources would allow for more efficient use of troubleshooting resources.

State of Information Management at NAL

This section addresses the state of information management at NAL as it relates to the tasks set forth in the 1994 EII Planning Report. Since the release of this planning document, NAL has witnessed a number of accomplishments in the areas of customer service, access to AGRICOLA, NAL's integrated library system (ISIS), cooperative ventures with external institutions, and the availability of electronic information. Brief descriptions of these initiatives and related activities follow.

Establish Customer Service Standards for USDA/ARS

A component of this EII planned activity centered on evaluating user needs focussing on USDA/ARS, the information requirements of its researchers, and their connectivity capability. In the summer of 1997, at the request of ARS administration, a survey of ARS scientists and staff was conducted on their secondary source information needs. The ARS Literature Searching Needs Assessment was performed within the framework of the continued need to offer the Current Awareness Literature Service and provides valuable insights on information gathering techniques used by ARS researchers and staff. As a result of this survey, anecdotal information also was gathered on the connectivity (or perceived connectivity) of ARS locations.

The resulting report was to be used by ARS Administration to determine if the value of CALS to its researchers justified the cost of providing the service. The service was extended into 1998, but continues to be evaluated by an ARS-wide team which includes a representative from NAL. This team is charged with assessing ARS research information needs and will provide recommendations to ARS administration in the summer of

1998. This assessment will be conducted via a survey targeted to the ARS researcher which complements the one issued in 1997. NAL will take the appropriate steps to comply with the decisions of the ARS administration which will be based on the recommendations of the ARS-wide team.

In a separate 1997 initiative, the Electronic Media Center began expanding the availability of its electronic resources to ARS researchers and administrators located within the Beltsville Agricultural Research Center. These tentative measures are being taken to test a decentralized implementation model whereby access to electronic resources would be negotiated by and provided through NAL using single points of contact within the cooperating organization. These contact points would be responsible for implementing the access methods most appropriate for customers within their own organizations. Other valuable information such as variability in licensing agreements and database usage statistics are being gleaned from this initiative. Further expansion and continuation of this initiative will be contingent upon funding and the identification of practical logistical methods of implementation.

Establish NAL's online version of AGRICOLA on Internet

In May 1994, Beth Sandore, a visiting scholar from the University of Illinois Library, submitted her report entitled, AGRICOLA Across the Internet--End User Needs. This study identified AGRICOLA's target audience, examined the content and indexing practices of AGRICOLA as they relate to end user searching, analyzed the functionality of systems that provided access to AGRICOLA at the time of the study, and suggested important features and functions that should be included in an Internet-accessible front-end to the database. In the period that followed this report, activities were undertaken to comprehensively identify the records comprising this database and load them into a repository for future manipulation.

In 1996, ARS Administration agreed that AGRICOLA should be made freely available via the Internet despite the potential loss of revenue from AGRICOLA sale tape subscriptions. NAL management further made the commitment to have this resource accessible by June 1998. Due to time constraints and a USDA-wide moratorium on information technology expenditures, NAL's existing integrated library system and its web interface were identified as the mechanism for providing this access. Through this interim solution, NAL will have converted the entire AGRICOLA database into the MARC format which in turn will facilitate future migrations to other systems.

Integrated Library System

Although not addressed in the EII recommendations, NAL's integrated library system is a significant component of its information technology infrastructure. The existing system was purchased as a turnkey solution in 1987 using the VTLS, Inc. software application and running on a Hewlett Packard minicomputer with a proprietary operating system. In 1992, the hardware was upgraded in order to improve system response time. The system now supports NAL's acquisitions, cataloging, indexing, serials control, holdings, circulation, and AGRICOLA tape production activities. It also serves as the online public access to NAL's collection and will serve as the mechanism for accessing NAL's AGRICOLA. In response to anticipated challenges in providing customers with documents from the NAL collection during the NAL building renovation, the document delivery component also will be implemented by August 1998.

Continue & establish new cooperative efforts with other agricultural institutions

In 1995, NAL in collaboration with several land-grant university libraries established AgNIC (Agriculture Network Information Center) on the Internet to provide a focal point for worldwide access to quality agriculture-related information, subject area experts, and other resources. NAL's specific contributions in developing new resources include creating: AgDB which is a database that provides descriptions of and gateway

linkages to more than 700 agriculture-related databases, datasets, and information systems; a directory which provides gateway access to directories of subject-and geographic-focused directories of agriculture-related information resources on the Internet; a Directories of Experts in Agriculture database; the AgCal Calendar of Events, a calendar of agricultural meetings, conferences, and seminars with a focus on those of scientific significance and that are national or international in scope; a searchable database of emerging plant disease announcements of the American Federation of Scientists' ProMed-Mail mailing list in order to provide access to this important information to those who would otherwise not have it; in collaboration with scientists of the ARS Northern Plains Area Office, a prototype database which provides access to the scientific research performed by Research Laboratories in the Colorado-Wyoming Region; and an ARS Sugar Beet Germplasm scientific dataset prototype covering research data from Beltsville, East Lansing, Fargo, and Fort Collins. The AGRICOLA Subject Category Code organization was incorporated into AgNIC's Directories of Experts in Agriculture, AgCAL Calendar of Events entries for CY 1998, the "Other Calendars" section of AgCAL, and AgDB to assist users in finding exactly the information they need. Another significant accomplishment was the 1998 migration of this system from an NT platform to UNIX. This migration was deemed necessary to take advantage of the abundance of UNIX-based web-enabling technologies and to conform to the platform used by the other AgNIC institutions.

It also has been identified as a high priority for NAL staff to begin incorporating AgNIC activities into routine NAL functions. Beginning with AgDB, NAL staff is redefining the data elements to facilitate the integration of AgDB record creation into the routine cataloging workflow. Defining the elements, mapping existing elements into the new ones, and determining the flow of these records through the OCLC/ISIS/AGRICOLA/AgDB/GILS system are tasks presently being undertaken by an NAL-wide internal task force. It is envisioned that implementation will begin by the end of calendar year 1998. Then, the system will be expanded to include input from cooperative institutions. Some modifications may be made to the elements and the process once the system has expanded to include other AgNIC participants.

NAL and its collaborators also have submitted a multi-year proposal to the Fund for Rural America. Technology related components of this grant include identifying and implementing a multi-server search engine and defining the metadata elements used to describe resources retrievable via this engine. Other AgNIC initiatives include: expanding AgNIC collaboration to additional land-grant universities and other institutions that have expressed an interest in participating; initiating a marketing program to enhance awareness of the value-added services available through AgNIC; contingent upon funding, conducting a customer needs survey; and contingent upon funding, participating in the development of a subject-specific prototype agricultural information system to benefit small-scale and limited-resources farmers.

Make NAL- and non-NAL-produced electronic information resources available

During fiscal year 1996, ISD held a series of three web authoring workshops for NAL staff. The purpose of these workshops was to expose interested staff to the concept of document structure and to the techniques of HTML-encoding. Courses in HTML-encoding are now an integral part of NAL's training program and facilitate the posting of documents on NAL's website. These courses will continue to be held as long as a need for them exists.

Since the inception of NAL's website, a subset of NAL-produced publications including policy and procedural documents; bibliographies; the 1993 and 1994 Annual Reports; Information Alerts; and vol. 21 numbers 4-8 of ALIN have been HTML-encoded and made Internet-accessible. Each area of the library has posted documents and/or created databases relevant to its particular domain. Non-NAL-produced Internet-accessible electronic resources have been incorporated or linked to as the needs were identified by NAL staff or requested by its customers and stakeholders. The site has grown so large, in fact, that now the Web Management Team is taking a step back to look at the existing structure and determine how it can be reorganized to better represent and make accessible the information NAL is attempting to share. This along with re-designing NAL's home page and

identifying an appropriate search engine are immediate initiatives the Web Management Team are undertaking.

The activities of IMB's Imaging and Conversion Unit are being redirected to facilitate this and other efforts related to the dissemination and archiving of electronic resources. In order to redirect the staff, existing text digitizing commitments must be honored and completed as quickly as possible without negatively impacting the quality of the products. The milestones for existing projects are: Curtis CD-ROM - anticipated project completion in the spring 1998; Agronomy 4 - anticipated project completion in the spring 1998; Agronomy 5 - anticipated project completion in the fall of 1998; and Food Irradiation 3 - anticipated project completion in the winter of 1998.

In January 1998, ICU staff began encoding electronic versions of back issues of ALIN in order to make these issues Internet accessible and to familiarize themselves with document structure and HTML-encoding. This is seen as the first step in the process to produce NAL documents in SGML for further print or electronic distribution. A related ongoing activity is that of the NAL AdHoc Committee on Electronic Publishing who are working together and in collaboration with the Library of Congress to develop a Bibliography DTD to be used in the creation of subject-specific bibliographies. In both of these initiatives, it has been recognized that a more user-friendly, streamlined process must be developed for the creation of SGML-encoded documents. A near-term priority is the identification of an electronic publishing suite that will facilitate these activities.

The results of these activities along with those of the Electronic Preservation Initiative, the Bean Improvement Cooperative project, and other NAL digitization efforts as well as NAL's archival responsibility for the Journal of Extension have led to a significant growing collection of SGML- and HTML-encoded documents. A system must be developed to methodically provide Internet access to these collections and to ensure the long-term retention of these electronic resources. So far, some prototyping has been done using public domain software and a number of demonstrations have been arranged to heighten the awareness of NAL staff on the capabilities of various document management solutions. Next steps include working with the Electronic Preservation Committee and the Web Management Team to identify and refine the requirements of such a system.

Future Direction of Information Management

Technology has changed since ISIS was originally purchased and many library management system vendors (including the one currently supporting NAL's activities) have moved away from proprietary centralized solutions to UNIX-based client-server ones. Despite the existing USDA moratorium on information technology expenditures, internal library processes and products need to be re-evaluated to determine which capabilities NAL's next generation library management system should accommodate. This re-evaluation will begin in 1998 with the resulting documents forming the basis for procurement activities. It is envisioned that implementation of a new solution will begin in 1999 and continue through the year 2000.

The use of ISIS as the vehicle for providing Internet access to AGRICOLA will provide NAL staff with the opportunity to evaluate the merits of integrating this resource into its library management system as opposed to a separate technology solution. The planning and implementation processes also have exposed staff to desirable system and end-user capabilities and undesirable limitations. These along with a more formal six month evaluation process will help guide the selection and implementation of NAL's next generation AGRICOLA.

NAL's desire to create a uniform interface through which all of NAL's Internet-accessible resources can be accessed may also play a major role in the selection and implementation of the next generation AGRICOLA. Another initiative presently under consideration would evaluate the strengths and weaknesses of combining the search and retrieval of SGML-encoded documents and bibliographic records using a Z39.50 compliant database management package, search engine, and front end. This evaluation study also would examine the workflow and

document management issues surrounding such a system. In implementing a long-term solution of this nature, NAL's production library management system would be separate from one that provides public access to electronic information.

A Note on Information Technology and Management Projects

Information technology and management projects derive from a number of sources. These sources include: USDA, REE, ARS, and/or their affiliated information resource management organizations; NAL management initiatives, end-user requests; and internal ISD tasks. The scope of these projects vary from the generation of reports to the identification and/or development of new systems.

Project initiation and implementation also vary depending upon the source and the immediacy of the problem. Those stemming from USDA, REE, ARS, and/or their affiliated information resource management organizations usually entail the gathering and reporting of information, but can also include the implementation of new administrative or office management systems or a re-evaluation of networking strategies. These are usually mandated, have predetermined requirements, and have a finite schedule for completion.

Those stemming from NAL management are usually large-scale, resource intensive, and impact entire NAL operations. They require NAL-wide commitment for successful implementation. An example of such a project is AGRICOLA98.

Internal NAL end-user generated projects enter the ISD workflow through the Request for ISD Assistance. These requests are assigned priorities by the Associate Director responsible for the unit from which the request originates. Occasionally, these requests stem from e-mail messages to Help, or phone calls to the ISIS support line that are found to be more complex and resource intensive than anticipated. For the most part, Help and ISIS support line messages involve trouble-shooting system difficulties that must be handled as quickly as possible and are therefore not considered ISD projects.

ISD-related projects are usually technology driven and center on upgrading and maintaining the installed hardware and software base and providing for its security. Some ISD-generated projects involve the testing of new technologies for potential NAL implementation. The testing of new technologies, however, is often found to be a lower priority than the many other information technology and management needs of the Library.

Recommendations for NAL's Management Team

The Information Systems Division (ISD) has the responsibility of being cognizant of new and emerging technologies related to NAL and to information technology and management, of developing and overseeing the implementation of projects, and advising the Library on technology issues. The Associate Director is the conduit for staff concerns and/or questions about technology and will periodically report on progress made in the areas of information technology and management.

Working with the various units throughout NAL and staying abreast of technology developments, ISD is in a position to determine many of the information technology requirements of the Library. However, ISD also depends on staff members to relay their needs and questions concerning technology issues. Two forms were developed in FY 1997 to serve this need. The Request for ISD Assistance and the Request for Electronic Resources. They have been successfully used since their implementation. A combined version of the forms along with some revisions are expected to be made in FY 1998. More recently, a functional requirements procedure document was developed which outlines the responsibilities of ISD staff and the user community in the development of requirements for new information technology projects. While these procedures assist in the processing of requests for technology and management assistance, it is imperative that a formalized approach be

used to determine where NAL's resources will be spent.

It is recommended that an assessment of information technology and information management (IT/M) issues be conducted bi-annually in the months of November and May by the Management Team to determine long-range goals. November is suggested because it follows immediately after the busy end of the fiscal year and still allows for the obligation of funds to met needs. May is suggested because it provides the opportunity to redirect funds within the fiscal year if necessary and it is a six-month separation from the initial fiscal year assessment. As part of this assessment, the Associate Director for Automation will provide a status report on all IT/M projects. The bi-annual sessions will allow the Management Team to confirm or reassess priorities and will foster greater understanding of Branch or Unit specific information technology or management issues. It may also facilitate the generation and completion of future requests.

In addition to the bi-annual assessment, it is also recommended that new IT/M issues be discussed, as needed, at the weekly Q2 meetings. This will provide an opportunity for all branches, task forces, and committees to submit through their Associate Director all suggestions, concerns, and questions regarding information technology and management as they may apply to NAL. To facilitate discussion and potential action, these topics will be presented with:

- Problem Definition: A clear statement of the problem or need being addressed.
- Point of Contact: Contact information for in-house person who can provide additional information.
- Current Operational Analysis: A description of the way in which tasks are now being done. This also may include a statement of what cannot be done due to the limitations of current technology.
- Available Options: If known, provide information on how this problem has been resolved in other institutions. Include source or contact information. If web-based, include URL.
- Potential Impact: Indicate other NAL units that may be impacted by implementing or not implementing a solution.
- Recommended Priority: The priority level that the originator thinks the project should be assigned.

The Management Team will evaluate all presented issues and determine a priority for those slated for immediate action as a project. This priority ranking will be incorporated with current projects. While the coordination and/or implementation of many projects are the responsibility of ISD, projects may also be assigned to PSD or TSD for coordination. The decision of assignment will be made by the Management Team. Projects given to the Associate Director for Automation will be assigned to the appropriate ISD branch for implementation or for further evaluation.

Small-scale projects that can be implemented are those that can be done quickly, do not require special resources, will not affect other projects or activities, and do not require special consideration or options. Large-scale projects requiring further evaluation are those that are time intensive, require additional resources, pose security risks, and need additional evaluation. If it is determined by ISD that additional evaluation is required, the evaluation will be conducted by an ISD staff member who will work closely with the point-of-contact. They will prepare information for the Management Team to further assess and determine a priority. The research and evaluation conducted for each topic may vary. For example, topics requiring a large-scale study will only be defined as such but will include an approximate cost and time line. Those topics requiring less research or topics with which ISD staff has expertise will have more details reported. It is the goal to provide to the Management Team information in these areas for each topic.

- **Problem Definition:** Formulate a clear statement of the problem or need and recommend a project coordinator.
- **Current Operations Analysis:** Define the way in which tasks are now being done that will be automated by the requested technology. This may include a statement of what cannot be done due to the limitations of current technology.
- **Available Options:** Provide known alternatives for solving the technology need. Evaluate how each alternative synthesizes with other library operations.
- **Evaluation:** The evaluation will be the development of a detailed functional requirements (process is currently being developed by ISD) with the focus on expected performance not the method to be used. This step may be delayed until after approval of the project by the management Team since it is usually a lengthy process. When possible, a synopsis will be provided.

Potential Effects on the Library and Associated Risks: Provide information on ways the technology may affect the Library including organizational changes such as more dependence or independence among branches, facility alterations that will be needed such as wiring and relocation of equipment, and staff and patron concerns about changes in procedures and staff reduction that automation can bring. Information on the risks associated with implementing and with not implementing the technology.

- **Resource Requirements:** An estimate of staff and funds needed to implement and maintain the technology. The current projects may be affected because of a need to redirect staff to a new project.
- **Projected time lines:** An estimate of the major milestones and projected length of time to complete. For large-scale projects, time lines will be given for studying the technology and making a recommendation.
- **Recommended Priority:** A priority recommendation relative to other technology issues being considered for implementation.

The Management Team will evaluate all proposed projects and provide a report to NAL staff. The report will contain a list of projects in priority order, project coordinator, Divisions' points of contact, funds origination, and any specific requests or comments. It is recognized that not all projects can be implemented due to resource constraints. The Management Team will provide reasons for the ranking and include reasons projects were delayed or rejected. Perceived advantages to each project will be included in the management Team's report supporting their commitment on decisions.

Appendices

Appendix A -- Status of EII Recommendations

Appendix B -- Graphical Representation of the NAL Infrastructure

Appendix C -- Project Plan for Catalyst 5000 Integration

Appendix D -- Graphical Representation of BARC ARS Backbone Network

Appendix E -- Windows NT LAN Planning Process

Appendix F -- NT LAN Server Applications and Description of Application

Appendix G -- Databases Available on EMC Servers

Appendix H -- NAL Servers and Their Applications

Appendix I -- Responsibilities and Qualifications for NAL Webmaster

Appendix J-- Web Management Team Charter

Appendix K-- Graphical Representation of Available Remote Access

Appendix L -- Departmental Notice 3120-1, Technical Standards Architecture

Note: Other appendices reflecting IT policies will be added to this document.

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Appendix Y

USDA Blue Ribbon Panel on the National Agricultural Library

Task Group on Section D of
the Questions for Long-Range Planning

Members: Philip Hudson, Martin Apple, Austin Hoover, Robert Willard

I. CHALLENGES AND FUTURE THREATS FOR NAL OR ITS LEADERSHIP ROLE

The NAL has an important role as the library of the U.S. Department of Agriculture. Its most important role may be that of being a leader in the field of agriculture information. To optimize its effectiveness in that role NAL will need to focus on its expressed vision that "agriculture information will be more accessible to more people through technology," and that "the NAL will lead in the information revolution by forging partnerships and exploring new methods and technologies that advance open and democratic access to information."

We applaud the above vision set out by the NAL in its Vision statement, but see the NAL as struggling in its fulfillment due to resource restrictions and competing expectations.

The Internet: The internet has created a challenge for all libraries. A rapidly growing user base prefers on-line searching as a methodology for both speed and comprehensiveness. Libraries have played an historically significant role as places where information resources are stored and accessed. The internet has changed and will continue to change the way research is conducted and needs for knowledge are, and can be, fulfilled. Continued leadership in the internet field will require new perspectives, ongoing new ideas and understandings, and a significant commitment of financial and human resources.

Visibility: NAL may be providing valuable services that are largely invisible to key decision-makers who affect NAL.

Resources: Shrinkage of financial resources over the past several years has diminished the ability of NAL in its leadership role. The library management system (software) is old; facilities are in need of repair; services have not been able to keep pace. Federal budgets for agency programs and services (non-entitlement) have been restricted for several years and will probably continue to be restricted in spite of projected surpluses.

Staff: Seen as a current strength of NAL, the question remains to how long NAL will be able to recruit and retain top-flight staff with budgets shrinking in real dollar terms.

Market Adaptation: NAL action planning emphasis needs to be more emphatically shifted from data collection and retrieval / broadcasting into addressing and satisfying a wider spectrum of customers' changing needs for information, analyses and knowledge management.

Information has no value if it is not used; its value is measured by its use. However, there needs to be a measure of the "future value" of some information, a novel Net Present Value estimation. The current costs associated with the retention of unused information can be justified by some measure indicating that some of the information be retained now will not have value (be used) until years in the future.

Strategic choices: The role as USDA's library is assumed as a baseline requirement for NAL and well within its capacity. Leadership in the field of agricultural information requires difficult strategic choices. What resources will be allocated to NAL the place, what resources to on-line services versus physical texts, what toward preserving historical treasures versus advancing new knowledge?

AGRICOLA, for example, has served as a leading solution for agriculture researchers. More recently it is not delivering up to expectations in some user's eyes because shrinking budgets have created gaps that compromise its value. Researchers are increasingly turning to alternatives, sometimes much more costly. What steps could be taken by NAL to receive some of all of the differential revenue that users are willing to forego when they seek such alternatives?

Advocates: NAL lacks a strong constituency to lobby for resources.

II. DEFINING AND SATISFYING THE CUSTOMER BASE

The future of customer groups needs to be assessed, along with potential competition to satisfy their needs, to see where the NAL niches may be developed or strengthened. This matrix needs data & conclusions, including determining the different strategies that are best for each basic types of user:

Customer Segments	What type of Services do they need now?	What will they need in the future?	What competition may serve these needs?	NAL's strengths in this niche, both present and possible in future
ARS Other USDA				
FDA				
Other Federal				
Education Institutions Land grant, 1890 Priv. Coll, K-12				
Agribusiness				
Small Farmers; Extension Services				
NGOs; Non-profit Organizations				
Professional Associations				
International				

There is a need to enhance NAL marketing and marketing research on changing customer needs. Regular surveys of customers, prospective customers, and other stakeholders are needed in order to reallocate resources and

optimize services. Perhaps the Friends of NAL might be a source for such ongoing research that might be otherwise encumbered if attempted by traditional federal channels.

Alternative Customer Segmentation

Alternative customer segmentation should be developed for two purposes: first, to be able to understand and capture both newly emerging types of users and newly emerging areas of need for information, and second, to be able to better develop new areas of expertise withing the nAL to ensure that NAL maintains its leadership. It is more important to have the ability to appreciate and understand early the changing needs of customers than to pick easy-to-document categories that mask the emerging trends and require NAL to redeploy more resources to catch up. One such example is shown below.

Customer Segments	What type of Services do they need now?	What will they need in the future?	What competition may serve these needs?	NAL's strengths in this niche, both present and possible in future
Res Scientists - ARS Res Sci-entomology Res Sci-pathology Res Sci-soil science Res Sci-genomics Res Sci-nutrition Res Sci-food safety, etc. Res Sci-Other				
Government Mangers Business Managers				
Extension Agents				
Campus Librarians Other Librarians				
Agribusiness-crops Agribusiness-animal				
Small Farmerss-crops; Small Farmerss-animals				
Economists				
Grad Students Other Students				
Foresters				
Ecologists				
Biotechnologists				
Historians				
Informatics				
Legislators				
Knowledge Management				
Etc. Etc.				

III. NAL LEADERSHIP OPPORTUNITIES IN THE NEXT 20 YEARS

The leadership challenge facing NAL might be highlighted by focus on a grid of strategic choices between on-line versus physical texts and historical research versus research that advances new knowledge. It is in the quadrant of on-line approaches that create and advance new knowledge where we believe that the most critical and expanding leadership role can be played by NAL.

Medium	On line		<i>NAL 21st Century Leadership Quadrant</i>
	Text Based		
		Historical Research	Advancing New Knowledge Supports

This leadership role for NAL might mean focusing on a Knowledge Management approach that would facilitate the value, growth and use of new agricultural knowledge.

This leadership direction might be best served by turning the NAL basic paradigm from the biggest and best collection of knowledge into the most rapidly evolving and effective processes for gathering and distributing agricultural knowledge.

Some other possible leadership roles could be:

- Facilitation of dialogue of researchers on topics of new knowledge
- NAL could be an effective partnet with the other National Libraries and other leading experts in creating uniquely effective new search engines/search processes in agriculture;NAL's future Expert Search software, designed for agriculture, could lead all other national libraries in effectiveness.
- Teaching agriculture knowledge management processes to colleagues in the field

IV. STRATEGIC DIRECTION - OPTIONS FOR NAL

- A. Serve as the hub in a differentiated information network that includes land grants, other universities, company libraries and topical www networks.
- B. Premier expert assistance on Ag research is an important NAL service to university libraries. Expand this important staff resource by recruiting specialists in important knowledge fields and train them in library sciences as subject specialists.
- C. Organize NAL services better for customer segments using "market managers" who would advocate for services to meet those customers' unique needs, market to those customers, and build constituent support among those customers.

- D. Focus on what is not indexed elsewhere and do a good job at that. Work out cooperative agreements with the States to index state agricultural publications.
- E. Select leadership niches (e.g: develop the [online] intelligent search system that always most rapidly and most accurately provides the most useful answers to the most diverse range of knowledge searchers).
- F. Develop funding strategies for various services. As each NAL's service becomes exemplary, construct user fees to support that service. Benchmark against services such as Chemical Abstracts. Inform and mobilize constituent groups to secure funding for certain services.
- G. Explore long-term loan/donation of rare book collections to the LOC or universities with interest in historical agricultural research, especially if they can attract private sector endowments to maintain and display.
- H. Coordinate the vocabulary/definition/classification/organization of agricultural information, regardless of where it is.

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A Guide to Using the Pie Charts and Analyzing Results of the Survey

- **53 staff responded to the survey**
- **Not all questions were answered by the respondents**
- **Respondents gave several answers to the same question**
- **Not every answer is represented in the pie charts**
- **The pie charts focus instead on the major issues:
NAL's strengths, weaknesses, services, barriers**
- **The numbers in the pie charts are representative of predominant responses by staff to the major issues**
- **The additional comments represent individual responses**

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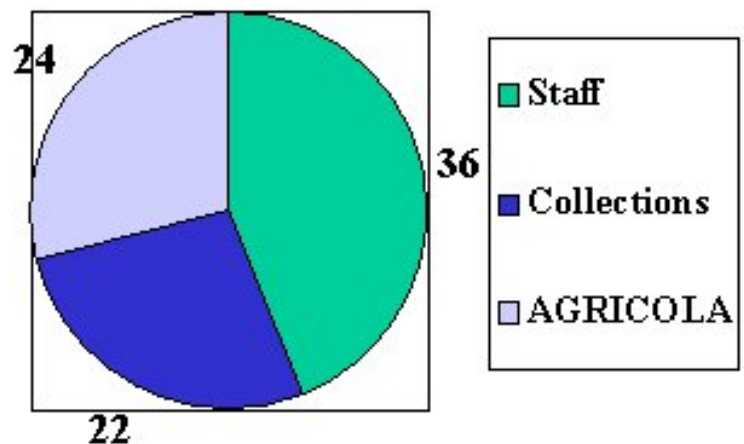


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Major Strengths

- Respondents considered major strengths to be knowledgeable and dedicated **staff** committed to mission of providing customer service
- Respondents viewed the **collections**, particularly the historical and special collections in agriculture and horticulture, especially those published in the USDA agencies and the grey literature, as strong elements that make NAL a valuable resource
- Access to the collections through the online catalog, the Information Centers, and information technology services such as **AGRICOLA** were considered to be major strengths



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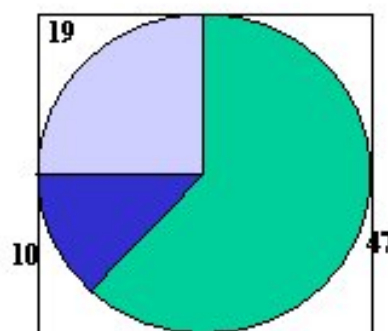
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Weaknesses

■ Management:

- No experience
- Lack of literacy in sciences which has led to bad decision-making and decrease in funding
- Lack of vision
- Poorly planned initiatives with no follow through or prioritization
- Unprofessional behavior
- Mistrust and poor utilization of staff
- Lack of communication between staff and management
- Failure to address staff problems
- Poor leadership of director
- Lack of accountability



■ Management Issues
 ■ Outdated databases
 ■ Budget

■ Outdated databases:

- Decline in quality of coverage of AGRICOLA database
- ISIS catalog needs replacing with system that has improved searching capabilities
- VTLAS is outdated and not Web-based
- Usage data not systematically reported
- Aged OPAC and Web site

■ Budget:

- Shrinking budget which prevents NAL from properly fulfilling its responsibilities
- Shrinking staff and increased work
- No staff training
- Too much emphasis on outside funding
- Lack of input from staff on budgetary issues
- Funding for unnecessary cosmetic renovations

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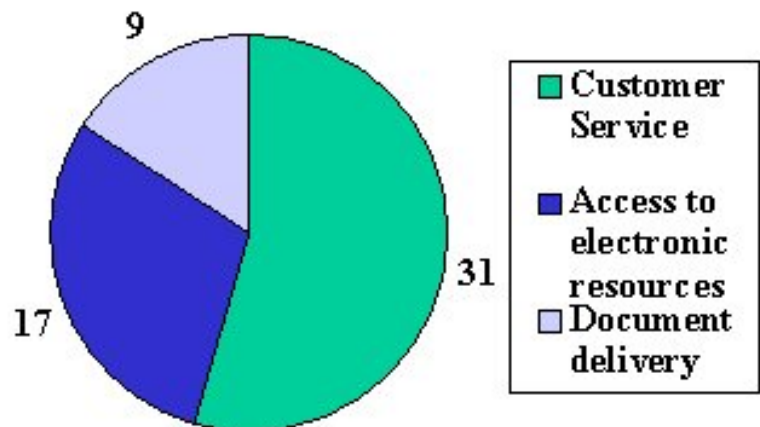


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Critical Services

- **Customer service** (reference) to USDA agencies and ARS were considered to be the most important service
- Patron **access** to Web AGRICOLA, AGNIC, and NAL's Web site are the best services
- **Document delivery** to USDA and congressional customers is a major NAL asset, although there was criticism of the inefficient tracking system for ILL



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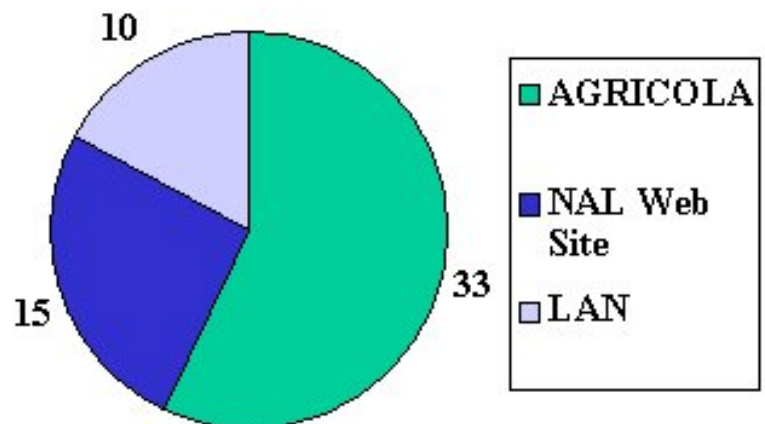


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New or Improved Services

- Enhancement of content on **AGRICOLA** database and provision of more user-friendly interface for Web version
- Redirect funding towards redesigning **NAL Web site**, supply better search engines, metatags, graphics, user studies, self tutorials
- **LAN** services: Increased access to full text electronic resources, more Web development, electronic tracking of patron requests, overhaul of OPAC (new ILS), employment of modern media and communications specialists to support existing and future technological programs



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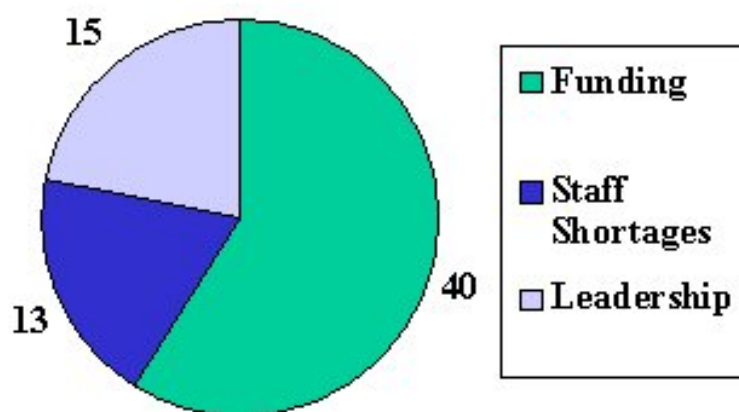


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Barriers

- The number one impediment was **funding**, due to untapped avenues of generating revenue and limits on budget over period of 5 years or more
- **Staff shortages** which cause a decrease in productivity levels
- Strong **leadership** in management lacking
 - fear of change
 - lack of staff training
 - unmotivated staff



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Type of Work, Length of Service

- **Type of work:**
 - Majority of respondents employed in public service, information systems development, and library administration
- **Length of service:**
 - The term of service for staff responding to the survey ranged from 3 months to 18 years

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Additional Comments

- Need better leadership: management lacks focus, priority
- Better marketing of NAL products
- Hire development official to generate funding
- Foster improved relationships among staff and management
- More staff training
- Improve building landscaping
- Need bioinformatics at NAL
- We would benefit from TQM training
- There is favoritism and low morale
- NAL needs an onsite training manager

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Additional Comments

- NAL should again be a separate agency
- NAL should encourage sabbaticals by professors in agriculture
- The summer student program is a good one
- Contractors should be allowed to park in the staff parking lot
- NAL needs a Friends of NAL group to lobby Congress for money
- Sources of funding are lost because management does not value the Information Centers
- NAL should maintain a high presence in the USDA by increasing collections of the DC Reference Center
- NAL needs to shift the focus to projects with potential for generating income

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Additional Comments

- Talented staff seldom called upon for ideas
- Basic utilities (lights) are maintained through lapsed salary, diversion of program monies, reduced collection
- Staff are performing an inordinate amount of work for little compensation
- Appreciate support USAIN is providing
- Leaving for another job, worst morale of any place I've worked
- Never heard complaints and feel NAL has good, knowledgeable staff
- NAL needs more opportunities for meaningful interaction among offices and branches to increase staff understanding of its mission
- Please consider the impact Blue Ribbon Panel decisions will make on staff, resources and facilities as well as NAL products

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Additional Comments

- Need significant increases in NAL resources: note <http://www.plumbdesign.com> for examples
- Thank you for listening
- NAL has much to change to gain respect among the library community
- NAL is a national treasure that has been lost. Hope the Panel can dig it out
- Suggest small core of staff continue to provide USDA headquarters with specialized information services
- Funding should be derived through “green book”
- Special information center should be created for downtown facility to support DCRC so that it is showcased to enhance awareness of NAL to USDA agencies

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Additional Comments

- Staff job hunting or counting days until retirement
- Communication deplorable, rumors rampant, nepotism is alive and well
- I hope that Blue Ribbon Panel “shakes up NAL”
- NAL has lost its unity and now has 20-25 competing, mediocre, small libraries
- I have little hope staff concerns will be addressed because they have not in prior surveys
- Outside evaluators believe what NAL management tells them
- Critical staff ignored and NAL losing best employees
- Hope Blue Ribbon Panel will address staff concerns this time around

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