Appendix G.—**AGRICOLA and ERIC***

Introduction

The Federal Government uses a variety of methods to produce and distribute data bases. The approach adopted by the National Library of Medicine (NLM or the Library)-creating and providing access, directly and indirectly, to its product—has been discussed in *some* detail. The efforts of the National Agricultural Library (NAL) and the National Institute of Education (NIE) described below further illustrate avenues available to the Government to ensure that needed information reaches researchers, practitioners, and in some cases, the public in a timely fashion.

The National Agricultural Library and AGRICOLA

The Agricultural On-Line Access (AGRICOLA) is a family of data bases containing citations to journals, monographs, and U.S. Government reports on agriculture and related subjects, including food and nutrition, economics, law, rural sociology, and many of the basic sciences. Currently, AGRICOLA contains 1.75 million citations to articles published in approximately **6,000** serial titles dating from January 1970. Unlike NLM, NAL does not provide on-line services, but rather makes its data base available to purchasers at a charge slightly above the costs of reproducing the file on magnetic tape, plus a minimal use fee. AGRICOLA is available on-line at $18 to $40/hour through the commercial services, DIALOG Information Services, Inc. (DIALOG), Bibliographic Retrieval Services (BRS), and System Development Corp. (SDC) (see table **8, ch. 4).**

Legislative Mandate

AGRICOLA was developed and is maintained by NAL, the cornerstone of the U.S. Department of Agriculture's (USDA) Technical Information Systems. NAL began as the Department of Agriculture Library in 1862, but was not established as a national library until 1962. The congressional act establishing USDA states that "the general designs and duties [of USDA] shall be to acquire and to diffuse among the people of the United States useful information on subjects connected with agriculture in the most general and comprehensive sense of that word," and that "it shall be the duty of the Commissioner of Agriculture to acquire and preserve in his Department all information concerning agriculture which he can obtain by means of

books and correspondence." NAL's current primary functions include coordinating a national agricultural science information network and serving as the prime information resource for land-grant and other academic libraries across the Nation. NAL is the second largest U.S. Government library in existence, and use of the largest agricultural libraries in the world. It has holdings of over 1.7 million volumes.

Indexing and **Coverage**

NAL is primarily responsible for generating the AGRICOLA data base. The original thrust was to automate the manual indexing procedures of the Bibliography of Agriculture, published since 1942. NAL receives approximately 25,000 journals per year and indexes over 6,000 of these journals and other serials for the AGRICOLA data base. It spends $710,000 per year on journal acquisitions. Titles are selected in accordance with the published selection policies of NAL and on the recommendations of NAL's Board and staff. In addition, agreements with **56** foreign countries establish a quid pro quo exchange of agricultural publications—approximately one-half of the citations in AGRICOLA are to international works, and 70 percent of the NAL collection is obtained through exchange arrangements.

Unlike NLM's MEDLARS, which uses free text word searching and medical subject headings (MeSH), a controlled vocabulary, AGRICOLA uses only free text word searching, though NAL is currently studying the United Nations' AGRIS (International System for the Agricultural Sciences and Technology) vocabulary for future use. AGRICOLA is updated on a monthly basis; 130,000 records are added each year.

AGRICOLA covers the broad field of agriculture and related subjects as listed below:

- agricultural economics
- agricultural engineering
- agricultural products
- animal husbandry
- aquiculture
- botany
- chemistry
- ecology and environmental science
- energy in agriculture
- entomology
- fertilizers
- foods
- soils
- forestry
- human nutrition
- hydroponics
- pesticides
- plant sciences
- rural sociology
- water management

In addition to AGRICOLA, USDA compiles CRIS (Current Research Information Service), a-data base similar to NLM's CANCERPROJ. CRIS contains project summaries for **95** percent of ongoing U.S. agricultural and forestry research efforts, in all over **25,000**

summaries. CALS (Current Awareness Literature Searching System) is similar to SDILINE, providing regular screenings of the current literature available through AGRICOLA and eight other data bases leased from commercial vendors.

CAB (Commonwealth Agricultural Bureau), a data base produced in the United Kingdom, covers 60 percent of AGRICOLA citations. There is also some overlap with BioAbstracts and MEDLINE, especially for articles in biology and veterinary medicine.

AGRICOLA is also distributed by NAL through the National Technical Information Service (NTIS) to private producers of printed bibliographies (e.g., The *Bibliography of Agriculture)* and dictionary catalogs, and to several foreign Governments with large agricultural research centers. NTIS has full responsibility for the duplication and sale of the AGRICOLA tapes to *24* customers, though it relies on NAL in assuring user satisfaction.

Users

Like MEDLARS users, AGRICOLA users are difficult to enumerate and describe. NAL assumes that most users are researchers and educators who obtain AGRICOLA'S services through the Nation's 69 land-grant colleges. Greatest usage probably is by employees of USDA though the system is valuable for researchers working in many of the general and applied sciences, agricultural engineers, food inspectors, and State extension agents, as well as faculty members, students, and private sector employees.

Document Delivery

NAL fills between 250,000 and 300,000 individual requests for books and journal articles per year. Document delivery is indeed one of major activities. Like NLM's Regional Medical Library Program, NAL has established 24 regional document delivery centers, based in the land-grant agriculture colleges, using its own resources only when documents are unavailable elsewhere. Documents are made available without charge to USDA employees. Other requests for photocopied articles are charged $3 per 10 pages. The regional centers are reimbursed for services provided to USDA researchers.

Training

Though AGRICOLA is available only through commercial vendors, NAL offers training courses in searching its data base, Workshops last 5 days, include at least 8 hours of on-line time, and are provided without charge. NAL's courses are less restricted by demand than those offered by NLM for MEDLARS, and are open to information specialists in both the private and public sectors.

Two levels of training are offered: one for those with no prior experience with AGRICOLA, and a second that focuses on subject searching for searchers with 6 months to a year's experience. The commercial vendors offer training programs on their systems, but they are not specific to AGRICOLA.

National Institute of Education and ERIC

ERIC (Educational Resources Information Center) is an information service funded by NIE (Department of Education) that maintains a bibliographic control system for educational journals and research reports.

ERIC's beginnings resulted from a boom in education research in the mid-1960's that overwhelmed existing systems' abilities to catalog and announce research findings to practitioners and other researchers. The agency's collection and indexing activities are decentralized around the country in 16 clearinghouses representing different levels and areas in education (see table G-1). Like medicine and health care, many electic subdiscipline contribute to the knowledge base of education, often without communicating with each other. The series of ERIC clearinghouses allows professionals tied to these communities, and with the expertise needed to identify important research from each discipline, to identify and select materials for the ERIC data base.

Publications

ERIC's principal activity is the publication of two secondary journals, *Research in Education* (RIE) and *Current Index to Journals in Education (CIJE).* Begun in 1966, **RIE** is a monthly bibliographic index to the "fugitive" educational research literature, e.g. reports of federally funded research that are neither copyrighted nor available in refereed publications, Reports that the clearinghouses index for *RIE* are available on microfiche from ERIC. *CIJE was* first available in 1969 and is similar to *Index Medicus.* The clearinghouses, with the assistance of advisory boards, select articles from 750 journals to be indexed and abstracted for *CIJE.* NIE has no requirements for what a clearinghouse must include.

For both publications, clearinghouses build bibliographic records of journals and reports based on a single thesaurus of indexing descriptors. Every month each clearinghouse sends its records to the ERIC central facility in optically readable, printed form, where the records are transferred to magnetic tapes. The tapes

Table G-I.—ERIC Clearinghouses and Operating Organizations, 1981

ERIC clearinghouse for/on	Operating organ&at/on:
Junior colleges	University of California at Los **Angeles**
Science, mathematics, and environmental education	Ohio State University
Social studies/social science education	Social Science Education Consortium
Adult, career, and vocational education	**Ohio State University**
Counseling and personnel services	**University of Michigan**
Educational management	**University of Oregon**
Elementary and early childhood education	**University of Illinois**
Handicapped and gifted children	**Council for Exceptional Children**
Higher education	**George Washington University**
Information resources	**Syracuse University**
Languages and linguistics	**Center for Applied Linguistics**
Reading and communication skills	**National Council of Teachers of English**
Rural education and small schools	**New Mexico State University**
Teacher education	**American Association of Colleges**
Tests, measurements, and evaluation	**for Teacher Education**
Urban education	**Educational Testing Service**
	Columbia University

SOURCE: National Institute of Education,

are then given to the Government Printing Office (GPO) which publishes RIE and provides (without charge) tapes to the commerical publisher of CIJE, Oryx Press. GPO also furnishes the ERIC tapes to parties wanting on-line access to the data base.

Collections

ERIC is handled through GPO rather than NTIS because educational research information is outside the normal scope of NTIS interests. Additionally, it is important to note that while the ERIC data base is available on-line, the primary purpose of its construction is the publication of *printed* indexes, not the provision of on-line retrieval services. Thus, the on-line data base is a "spin-off" of the publications, and is sold to interested parties, including commerical vendors, for a few hundred dollars. Because the cost is so low, many universities purchase the tapes to mount on their own computers, giving them direct access to ERIC without using a commercial service.

In addition to the printed journals RIE and CIJE, Oryx Press publishes the *Thesaurus of ERIC Descriptors* from the ERIC tapes. The *Thesaurus* is the controlled vocabulary of educational terms used to enter and describe documents in the data base. Together, the three documents comprise a "minimal" ERIC collection, and are available at an annual subscription rate of **$136** for domestic users and $153 for foreign users.

An "intermediate" ERIC collection includes the three publications and the ERIC microfiche collection, containing documents announced and indexed in RIE. Subscribers may order the entire microfiche collection from the ERIC Document Reproduction Service for $2,000/year, or may purchase subsets of the collection. Currently, these are over 700 subscribers to the microfiche collection, including over 50 subscriptions to foreign users.

Like NAL, NIE does not offer on-line services. ERIC tapes are provided at cost of reproduction, and are available at over 500 libraries and information centers. For the most part, those libraries are served by the three major commercial vendors at rates of $15 to $35/hour. As noted, about so organizations have their own computer facilities, and purchase and mount the tapes directly for their own use. In July 1979, the entire ERIC data base, including retrospective files, consisted of seven RIE tapes and four *CIJE* tapes and cost $875. Thus, to purchase a "complete" ERIC collection, including *RIE* and the microfiche collection retrospect to 1966 and CIJE to 1969, an organization would spend approximately **$20,000,** and contact ERIC again only for annual updates. A number of directories and indexes tools are available, often at no cost, to enhance any level of an ERIC collection.

Users

Providers of ERIC resources are called "access points" 52 percent of which were affiliated with institutes of higher educational (Only discrete locations were counted; a single organization may have multiple access points.) There are an estimated **2.7** million "usage contacts" with the ERIC resources each year that prompt the identification of **32** million bibliographic records. Users spend **10.5** million hours annually with ERIC.

The number of on-line searches conducted on ERIC is growing. In 1980, 200,000 were performed, most (95 percent) by professional searchers and most often (65

percent) in academic settings. Of these, **50** to **60** percent were conducted for full-time students. Indeed, the bulk of ERIC "usage contacts" are from students and counselors, and for teaching and training educators. NIE sees the need to expose educational practitioners to the value of ERIC as its most pressing policy problem.

NIE does not anticipate on-line searches of ERIC growing to replace the importance of its publications, RIE and *CIJE.* Yet ERIC is the most frequently searched data base offered by the three commerical vendors, BRS, SDC, and DIALOG. It is the major source of bibliographic information for the social sciences, as well as education. A layman's guide to using ERIC is under development to encourage utilization by practitioners, though only a modicum of training is funded through the clearinghouses, and that usually as part of students' coursework. No Federal funds are spent marketing ERIC or its services. The Government has taken a "low-profile approach" to developing a public awareness of the data base; users have discovered it on their own.

The Federal Government spends $5.5 million a year for the development of ERIC. NIE's budget has remained at the same level for several years—necessitating, due to inflation and higher production costs, cutbacks in the amount of relevant literature, especially journals, captured for the data base. The ERIC clearinghouses also receive support from their organizational affiliates

Private Efforts

Wilson Publish ing produces the *Education Index,* a monthly guide similar to CIJE'. The two journals have some overlap; *Education Index* captures more of the topically relevant literature in publications outside traditional education disciplines, but is not so sophisticated a system for bibliographic control. It does not use keyword indexing, nor is it available on-line. Most educational libraries, however, have both ERIC and *Education Index.*