

**DEVELOPMENT INFORMATION SYSTEMS
IN THE
U.S. AGENCY FOR INTERNATIONAL DEVELOPMENT
CENTER FOR DEVELOPMENT INFORMATION AND EVALUATION**

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1. INTRODUCTION

The United States Agency for International Development (USAID) is a major channel of U.S. foreign assistance, with responsibility for assisting the advancement of economic growth in low-income countries. Information has a multi-faceted role to play in this effort, from improving the planning and implementation of specific development programs to facilitating sustained growth and equitable distribution of its benefits.

However, too often the utility and contribution of information in the economic development process are constrained by a curious mix of over supply, under relevance, impeded access and low demand. Although the quantity of available information relevant to development needs is increasing, uninformed decisions are nevertheless made for lack of the specific kind of information that is needed. Unsound projects are perpetuated. Opportunities for innovation are missed.

At the same time, even the most relevant information may never be utilized if too time-consuming to obtain, or if its availability is not known. Many people working on development tasks operate under extraordinary pressures. They have little time to pull together knowledge on the experience of others, and are often isolated from information resources.

The solutions to these problems lie in the way in which we provide development information systems and services. Development information is a commodity, and like other commodities it needs to be marketed. Among the challenges facing development agencies is the task of improving the packaging of relevant information resources and providing access to those resources.

Within USAID, the Center for Development Information and Evaluation (CDIE) is seeking to address this challenge through a number of information systems, products and services. While the scope of CDIE is briefly discussed below, the focus of the remainder of this paper is on CDIE's work in development information systems.

2. THE CENTER FOR DEVELOPMENT INFORMATION AND EVALUATION (CDIE)

A primary goal of CDIE is to facilitate and promote the use of information in improving the policies, programs and projects implemented by USAID. To accomplish this task, CDIE:

- maintains a Development Information System (DIS), comprising several databases of USAID project, technical and research information
- supports development of a microcomputer-based integrated library automation system (MicroDIS) for use by USAID overseas missions and other small development libraries
- provides statistical analysis services and multi-media access to macro-level economic and social statistical data gathered from development agencies such as the United Nations, World Bank and International Monetary Fund and maintained in USAID's Economic and Social Data Bank (ESDB)
- operates an information clearinghouse for USAID documents and reports, supplying them in microfiche or paper copy on demand, or through bulk distribution
- provides a professional research and reference service skilled in identifying information resources and synthesizing research findings to support development assistance program design and evaluation
- maintains the USAID Library, with a collection of approximately 150,000 reports and publications concerning development assistance, and provides access to other sources of development information through commercial database and interlibrary loan services
- synthesizes and disseminates USAID's development experience through a series of publications, including impact evaluations, special studies, program evaluation reports, discussion papers, AID Research and Development Abstracts (ARDA), and special bibliographies
- provides technical assistance in the establishment and organization of development information centers and the use of information management tools for acquiring, processing, retrieving and responding to information needs of the local development community.

CDIE's target audience for these information systems, products and services includes USAID staff and contractors, and host country individuals and institutions. Cooperative relationships are maintained with other U.S. and international development agencies.

3. DIS ... USAID'S DEVELOPMENT INFORMATION SYSTEM

3.1 Development of the DIS

USAID's Development Information System (DIS) was designed by CDIE to support agency needs for ready access to information and documentation pertaining to its policies, programs, projects and research. In 1981, several existing databases maintained on different computer systems were consolidated to form the DIS using the MINISIS software package developed by the International Development Research Centre of Canada (IDRC). Selection of this software also enables USAID to network and exchange data more easily with other institutions in the MINISIS user community engaged in economic and development assistance. CDIE runs this software on a Hewlett Packard series 3000/48 computer, with a total disk storage capacity of 1 gigabyte.

3.2 DIS Databases

The DIS currently provides access to several online databases containing citations of USAID-sponsored documents or projects, with a focus on project design and evaluations of "lessons learned."

The DOCUMENT database contains references to approximately 40,000 USAID-sponsored documents issued since 1974. Two-thirds of these documents were prepared in connection with specific USAID projects, while one-third are research studies and technical reports. Full citations include a bibliographic description and subject keywords; abstracts are prepared for design, evaluation and key research documents. Several fields in the database allow for tracking of the document as it goes through the processes of cataloging, microfiching, abstracting and indexing.

The PROJECTS database complements the DOCUMENT database, providing descriptions of approximately 7,000 USAID projects initiated since 1974. Each record includes the project title, name of the sponsoring bureau, country, project status, brief financial data and a project description.

A number of other databases are part of the DIS, including a CATALOG database of 1,500 non-USAID monographs, publications and reports added to the USAID Library since 1984; an INVENTORY database of older documents that have not been microfiched, abstracted or indexed; and several databases of mailing information for publication distribution. Using MINISIS capabilities, the USAID Thesaurus is also maintained online.

3.3 MenuDIS ... A MINISIS Software Enhancement

During the past year, CDIE has sought to enhance MINISIS software to provide for easy database searching by inexperienced end-users, not only within the USAID environment, but within the MINISIS user community at large. The software product developed -- MenuDIS -- is a menu-based interface to MINISIS written in the COBOL programming language. At each step in the search process, MenuDIS provides a menu, or list of numbered options. Brief screen messages provide additional explanation of each option if desired.

In addition to menu-based database searching, MenuDIS provides two options for display of full text files. One method permits the display of text as a menu option. For example, from the main menu, one may elect to either search a database or view one or more text files, such as bibliographies, publications lists or special analyses. The second method allows for optional display of text associated with specific database records.

Installation of MenuDIS by other MINISIS users basically requires specification of local database information (names, print formats, field mnemonics or tag numbers, etc.) and creation of locally defined help messages and text files as desired. MenuDIS screens are available in either English or French.

3.4 DIS and MenuDIS Availability

The DIS is accessed online by CDIE's Research and Reference staff and by interested USAID offices with a microcomputer and modem. USAID Library patrons can access the major databases via a public access terminal. CDIE has completed agreements for the exchange of tapes of subsets of the DOCUMENT database with IDRC, and is in the process of

completing an agreement with the World Bank. Subsets of document microfiche are also available to qualified development institutions.

MenuDIS has been available to the USAID user community since January 1986, and is available on tape to other MINISIS installations through either CDIE or the MINISIS User Group Program Library maintained by IDRC. The World Bank has been actively using MenuDIS since May 1986.

4. MICRODIS ... A MICROCOMPUTER-BASED DEVELOPMENT INFORMATION SYSTEM

4.1 MicroDIS Development

USAID maintains over 60 missions throughout the world, many of which contain small libraries or development information centers. CDIE is charged with providing technical as well as information support to these centers. After evaluating the difficulties associated with supporting such a large number of sites, CDIE decided to develop a microcomputer-based information system which would meet their needs as well as ensure uniform database record formats to facilitate information exchange. MicroDIS is the product of that decision.

Version 1.0 of MicroDIS was completed in December 1985. Several modifications have been made since that time as the software has been tested in several beta-site installations and in a large USAID mission. The interest shown by small development-related libraries has led CDIE to plan for additional modifications which will increase the utility of the software in non-USAID information environments.

4.2 MicroDIS Features

MicroDIS has been developed using dBase III code and compiled using a software package called CLIPPER. Currently, MicroDIS will run in compiled form on any IBM PC or IBM PC compatible. It will also run on a WANG PC with an IBM emulation board. The minimum microcomputer configuration should include 320K of RAM memory (640K is recommended) and a hard disk for storage of data. It is estimated that MicroDIS will require two megabytes (2 MBytes) of storage per 1,000 database records.

Because of its initial design as a library automation system, MicroDIS currently allows for creation of one document database (or library catalog). Approximately 25 fields of information in fixed-field format can be maintained for each record in the database. Several fields are inverted into fast access files to speed searching (e.g., author, title, descriptor, publication date).

MicroDIS is menu-driven and modular. The six modules available provide most of the functions required by a small information center:

Acquisitions

This module permits a library to keep track of items on order and produce several management reports on demand.

Catalog

Using the Catalog module, a library can add, modify, delete and search for records relating to items in the collection. In addition, terms in fast access files can be

viewed, and reports can be produced to facilitate collection management. Several utilities allow the user to backup and restore the database, import and export data from other Minisis or MicroDIS installations, consolidate storage and redefine document identification numbers.

Circulation

This module provides a library with the means for keeping track of items in its collection that are placed on loan and returned. In addition, it produces overdue notices and several other circulation reports.

Daily Log

Using the Daily Log, a library can record daily activity levels and produce reports showing the amount and type of service provided to different categories of library patrons.

Reference Desk

Text files, such as publication lists, a directory of other information resources and special bibliographies, can also be accessed through MicroDIS using menu options in the Reference Desk module.

Tutorial

This module is not yet available.

4.3 Planned MicroDIS Enhancements

Currently, MicroDIS only offers one format for display and printing of records; this is being modified to permit each user to select from among several formats, and to selectively print citations found during database searching. With the release of version 1.1, each MicroDIS installation will also be able to control access by securing individuals to specific modules.

Version 2, scheduled for release in the latter part of 1986, will feature increased speed in database search and retrieval, optional abstracts, expanded capabilities in the Acquisitions Tracking module, the ability to define activity categories in the Daily Log, and new utilities which will facilitate maintenance of fast access files.

Future enhancements to MicroDIS include creation of a version which will run in a multi-user environment, making it possible to install it on a local area network (LAN). In addition, CDIE is investigating the use of high density, mass storage devices (optical/laser disk) which would enable storage of large amounts of textual information as well as diagrammatic and tabular information.

4.4 MicroDIS Availability

As noted earlier, while MicroDIS was originally designed for the USAID mission information center environment, CDIE also views the package as a potentially useful information management and networking tool for small, developing country information centers. During the current phase of software development, efforts will continue to be focused on successful installation in interested USAID missions, but CDIE will consider

release of MicroDIS, on a case-by-case basis, to qualified developing country institutions and development-related agencies.

5. ESDB ... THE ECONOMIC AND SOCIAL DATA BANK

5.1 ESDB Capabilities

CDIE maintains USAID's Economic and Social Data Bank (ESDB), containing macro-level data for over 200 countries. The purpose of the ESDB is to provide the data on which to base models of economies, social and cultural patterns, and development needs. These models are intended to give historical, current and future views of these facets of the selected countries. The data are acquired from a large number of sources, including the International Monetary Fund, World Bank, United Nations, U.S. Department of Agriculture, and the Food and Agricultural Organization.

5.2 ESDB Access

Currently, USAID personnel in the Washington, D.C. area can use a user friendly Quick Access System to obtain over a hundred standard reports (in both time series and country comparison format) or to obtain user designed reports. The system can provide tabulation reports, graphs and maps for any individual variable maintained in the ESDB.

CDIE has also initiated a new service designed to distribute national-level economic, financial, trade and social indicator statistics on microcomputer diskettes. Data from the ESDB is downloaded onto diskettes and sent to users on a quarterly basis. The diskettes are suitable for use with WANG, IBM and IBM-compatible PC's, and are available in several file formats, all of which can be used with the most popularly used spreadsheet and analytic microcomputer software.

At present, ESDB resources and services are available only to USAID personnel and contractors. CDIE will, however, provide further information to development-related agencies on ESDB services should others wish to develop similar data resources.

6. CDIE's ROLE IN DEVELOPMENT INFORMATION NETWORKING

Through the information services, resources and information management tools described above, CDIE is seeking to expand the knowledge base of USAID experience in development assistance, and to facilitate the integration of this knowledge into the development process. As noted earlier, information is increasingly regarded as a commodity, but unlike other commodities it is "sharable," its value in fact often increasing the more widely it is disseminated.

These activities are all part of an effort to make information resources more readily accessible and responsive to the time constraints of end users. While some of these resources are specific to the USAID environment, others are or will soon be available to other development agencies. However, it is not only the specific information tools which can be exchanged, but also the experience gained in developing the capacity of information services. CDIE welcomes the opportunity to both share its experience and to learn of the experience of others.