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TECHNICAL INFORMATION FOR DEVELOPMENT

Annual Report

of the

National Technical Information Service

Office of the Director

Developing Country Staff

Fiscal Year 1978

October 1, 1977 through September 31, 1978



UNITED STATES DEPARTMENT OF COMMERCE
National Technical Information Service
Washington, D.C. 20004

OFFICE OF THE DIRECTOR
Developing Country Staff

December 12, 1978

Helen M. Ortiz
Education Economist
Education & Resources Division
Bureau of Latin America
USAID, Room 2245
2201 C St.
Washington, DC 20523

Dear Micky:

Here is the annual report of the Developing Country Staff for fiscal year 1978. The report covers all our activities sponsored by three separate funding organizations, as outlined in the report. There is, however, one common thread in all this activity--to increase the flow of scientific and technical information to LDC's.

Progress toward that goal is well documented in this report. Further details on any of these activities are available directly from my office at NTIS. We look forward to continuing this flow of information over the next year. With your support, the value of U.S. technical information and its use the world over will certainly grow.

Sincerely,

Terrance L. Lindemann/rhd
TERRANCE L. LINDEMANN
Foreign Affairs Administrator

Enclosure

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1

INTRODUCTION

This paper is the annual report of the NTIS Developing Country Staff for fiscal year 1978. It presents a brief history of NTIS activities in developing countries, an overview of the activities completed during the past year, and concrete examples of progress toward goals set for specific projects.

During FY 78, NTIS was asked to develop, manage, or participate in projects for a number of organizations. These were:

U. S. Department of State

Agency for International Development

- Bureau for Latin America
 Division of Education, Science, and Technology
- Development Support Bureau
 Office of Science and Technology
 Office of Development Information Utilization
- U. S. Embassy, AID Mission to Jordan, Amman
- U. S. Embassy, AID Mission to Egypt, Cairo
- Bureau of International Affairs
 Directorate for UNESCO Affairs

International Communication Agency

- Exhibits Division
- Science and Technology Programs

Peace Corps

- Office of Programming and Training Coordination

University of Denver

- **Denver Research Institute**
- **International Programs**

In addition, NTIS cooperated with U. S. embassy science counselors in India, Brazil, and Mexico to support U. S. positions established to fulfill bilateral agreements in science and technology. These programs are administered by the U. S. Department of State, Office of Environmental Sciences and Applied Technology, Bilateral and Multilateral Programs.

Essentially, the NTIS goals were:

- To use technical information to support U. S. foreign policy initiatives, particularly in aiding international development.
- To establish an operating network of cooperating information agencies dedicated to the transfer of U. S. scientific and technical information to LDC's in Latin America, the Caribbean, Asia, Africa, and the Near East.

In sum, this paper shows that great strides have been taken toward these goals. An operating network has been set up, consisting of 23 cooperating agencies around the world. These agencies have been supported by NTIS workshops and seminars, special communications media, and on-site consultations. Moreover, the past year has seen the start of a special effort in appropriate technology to provide individuals in LDC's the kind of information they need for small-scale or self-help projects. Special case studies and examples of such technology are being collected by NTIS so all cooperating agencies can share this new information.

As for the goal of increasing the flow of U. S. technical information, the year past has seen a threefold increase in this traffic. This was accomplished even though most of the project countries face a lack of expendable income for information, as well as a historical bias for fulfilling information needs from the United Kingdom, France, and other former colonial powers. NTIS is working to change this orientation by bringing U. S. leadership in science and technology into play.

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BACKGROUND AND OVERVIEW

BACKGROUND

It is well documented that technology has a large role to play in the economic well-being of industrialized nations. But it is also recognized that technical information can have a large influence in LDC's as well. According to U. S. Science and Technology for Development: A Contribution to the 1979 U.N. Conference, prepared by the National Research Council (1978), "developing country spokesmen . . . are virtually unanimous in believing that a great ability to acquire, devise, and utilize modern technology in industry is crucial to changing the balance. Thus, U. S. initiatives that are harmonious with this perception will have strong appeal." NTIS developing country programs have all been spawned as a result of a program begun in late 1971 for AID's Office of Science and Technology (TA/OST). Some specific activities resulting from that project are as follows:

- (1) Identify and appoint agents willing and capable of actively promoting availability of U.S. scientific and technical information, while developing and implementing appropriate marketing strategies and serving as an in-country focal point for U. S. scientific and technical information.
- (2) Sponsor scientific and technical information awareness seminars in project countries.
- (3) Conduct workshops at NTIS for cooperating agency officers to acquaint them with U.S. scientific and technical systems and NTIS operations.
- (4) Provide cooperating agencies with technical advisory services, including user education and marketing support, that will strengthen institutional capabilities.

- (5) Publish and distribute special announcement bulletin, Applications of Modern Technology to International Development (AMTID).
- (6) Give priority handling to LDC transactions with NTIS and administer air mail postal subsidy.
- (7) Provide special information materials and equipment compatible with cooperating agency capabilities.
- (8) Develop selected case studies for assessment of program benefits.
- (9) Withdraw subsidies to ensure cost recovery of cooperating agency operations.

Actually, programs toward that bill of particulars have evolved since 1971. The next few paragraphs trace that development.

OVERVIEW OF ACTIVITIES

The USAID/NTIS technical information network has made significant progress in broadening access and increasing utilization of U. S. scientific and technical information in Latin America over the period covered in this report. Below are some of the specific aspects that reflect the progress made.

New Cooperating Agencies

In FY 78, five new cooperating agencies were brought into the technical information network: INDOTEC in the Dominican Republic, CEDECANI in Panama, CENAP in El Salvador, CENIT in Nicaragua, CII in Honduras, which amounts to a total of 14 network countries in the hemisphere, including non-AID participants. The only remaining AID countries are Haiti, Jamaica, Guayana, Barbados, and Paraguay, where selection of focal points is in progress.

Establishment of Computerized Networks

The original proposal for the installation of the NTIS data base for subregional access is proceeding in the most advanced subregion, the Andean Pact, where tentative agreement has been reached for such a project. It has been found that this activity imposes quite a strain on the modest computer facilities available in Latin America, particularly where there is very limited hardware available.

In Central America and the Caribbean, telecommunications are improving at a sufficient rate that those focal points are looking toward direct linkages to the U. S. for computerized search of data bases. In this respect, NTIS has offered advice, courses, and training. Additionally, there have been discussions in Costa Rica about the possibility of helping to develop local capabilities. This issue has been found to be one of high priority as well as sensibility to the participating countries, and progress will be slow.

AMTID

The circulation of Applications of Modern Technology to International Development (AMTID) has improved greatly since it has been translated into Spanish. Distribution in Latin America was 6,000 English-language copies to Spanish-speaking countries. The distribution is now 9,600 (this should take into account the establishment of new cooperating agencies where before there were none). In fact, the demand for AMTID has become so great, that some cooperating agencies are complaining that they do not have the time or personnel to distribute AMTID, and the postage costs are far beyond their original estimates.

Access

The technical information network has been served with the publication of a quarterly newsletter INTINET, which has been renamed Access to International Development. This has also been well-received, and NTIS has been asked to translate it into Spanish.

Training

During FY 78, two workshops were held in Washington, where 27 participants came from project countries under subsidy from the project. In some countries, past workshop students have left the cooperating agency, thus necessitating the training of their replacements. They do, however, reappear from time to time in local program efforts.

Acquisitions

NTIS initiated an acquisitions program directed toward the Latin American countries. While it was received sympathetically by the individuals working in the network, the proposal was greeted rather more skeptically by others in the scientific and technical community. The basic objection was that somehow this information might be "lost" to the U.S. or used against us. Certain progress is being made with appropriate technology documents, where some 175 reports have been received from participating countries.

Appropriate Technology

NTIS has developed a major component of its project around appropriate technology in response to new initiatives in the field of foreign developmental and technical assistance. Here are a few highlights of this activity:

- An appropriate technology specialist has been contracted to coordinate programming in this field.
- Some \$75,000 has been set aside for the free dissemination of documents supporting appropriate technology activity benefiting the poorer sectors of society.

Evaluation

To improve evaluation, NTIS began two efforts that will continue into FY 79: One, contracting a case studies specialist, who has been interviewing users of NTIS documents and reporting their specific application of the information. Two, a mass mailing has been made with questionnaires to three types of users. The results of this survey will be analyzed in the second quarter of FY 79.

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MANAGEMENT

Within NTIS, developing country programs were initially managed by the Promotion Division under the supervision of the NTIS director. As these programs grew in size and complexity, a Developing Country Staff was established within the Office of the Director. Responsibility for NTIS activities in developing countries now resides with this organizational unit.

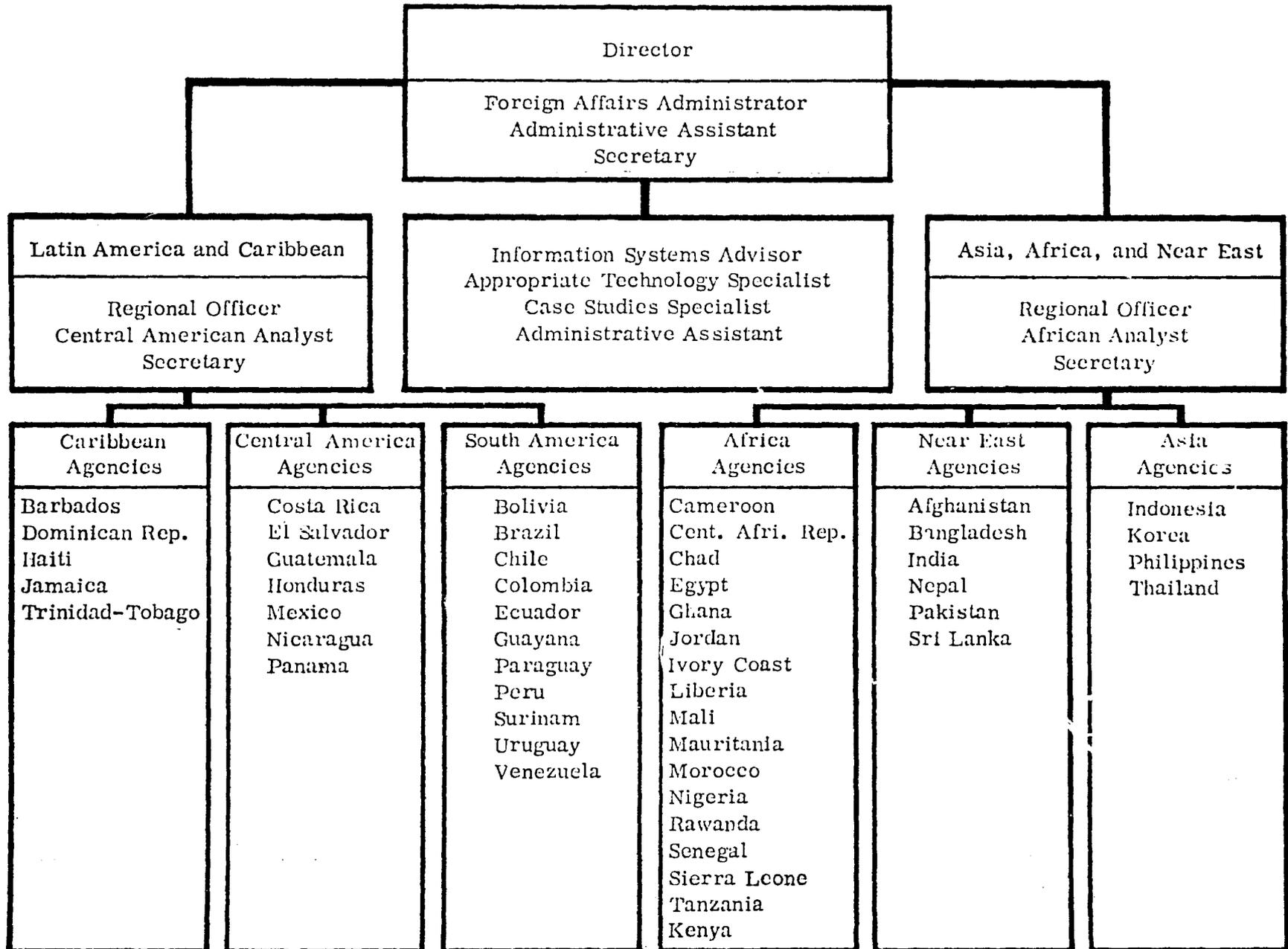
The late NTIS director, William T. Knox, maintained a close personal interest in developing country programs. Following Mr. Knox's death in early March 1978, the acting director, Peter F. Urbach, continued to give the program full support. As the fiscal year ended, Melvin S. Day was appointed director of NTIS. Mr. Day brings to his new assignment a record of involvement in international information activities.

NTIS personnel assigned to developing country projects on a full-time basis during the fiscal year were David B. Shonyo, foreign affairs officer, Africa and Asia; Adele Hilton, program specialist and assistant to Mr. Shonyo. Assigned on a part-time basis were Terrance L. Lindemann, chief of the NTIS Promotion Division; Vietta Dowd, technical information specialist and special assistant to Mr. Lindemann; Kathleen McCarthy, secretary; Nancy Dolphin, secretary (replacing Ms. McCarthy); Marion Janniche, administrative assistant; John Hounsell, writer-editor; Frank Post, foreign affairs officer, Latin America and Caribbean; Richard Garcia, appropriate technology specialist; Paul Bundick, appropriate technology specialist (replacing Mr. Garcia); Francisco Pardo de Zela, case studies contractor.

Figure 1 presents the organizational chart of the staff. The staff was established in August 1978. Terrance Lindemann was appointed foreign affairs administrator. Recruitment for other positions and transfers within NTIS to fill them were not completed in FY 78.

A project evaluation was held at DS/OST in February. The evaluation summary report is available under a memorandum of transmittal from W.D. Roseborough, DS/ST, to distribution, dated April 19, 1978. Two project evaluations were held at LA/DR.

Figure 1: DEVELOPING COUNTRY STAFF ORGANIZATION CHART



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COOPERATING AGENCIES

At the end of FY 78, 23 organizations around the globe were actively participating in two AID-funded projects. Daily, they receive technical information needed by their countries from NTIS headquarters in Washington, D. C., via computer, telephone, telex, and mail. In turn, they serve as local focal points for the latest research information from around the world, which is either available from NTIS or other U. S. and foreign services. Over a million titles are now in the NTIS collection: They range from agriculture and business through medicine and zoology. All are available to anyone, anywhere, through an in-country representative, which NTIS supports in a number of important ways. Using a local agency is convenient and economical: Users pay a lower price for valuable information; they pay in their own currency and receive priority service and airshipment.

A local network component helps developing countries stay abreast of the latest developments in information retrieval. There are few sciences as rapidly changing as information science. With the steady advance of computerized information collections, regional networks, and portable data bases, all nations will have to move fast to keep up with developments. Or they will face a broader gap from the next generation of changes in information science. Antiquated information systems could actually retard development, since progress depends on information.

The cooperating agencies also contribute to the NTIS data base, therefore promoting rapid exchange of data between representatives in countries facing similar population, climate, and economic problems.

NTIS and network participants survey the world's technical information, to expand and keep its bibliographic data file up to date. This includes both public and private research sources and national and international bodies. Most important, once material is added to the NTIS collection, it is never out of print. This is particularly important since many LDC users are seeking technologies developed over the last quarter century that are more likely to suit their needs than the latest "space age" technologies. Both are available and the information user makes his own choice about which information item best fits his need. Moreover, because the network focal point is a national organization, its information remains in-country--information that is constantly updated, never used up, and waiting to be called on to solve problems again and again.

The USAID cooperating agency network provides the framework for implementing most other activities NTIS undertakes for other agencies. It is truly an international organism with which both U.S. private and public sector organizations can work to implement new programs dealing with technology transfer.

Tables A-1 and A-2, in the appendix, list the document sales for overseas cooperating agencies.

5

APPROPRIATE TECHNOLOGY CLEARINGHOUSE

The NTIS bibliographic data base covers a broad spectrum of technologies. At one end of this continuum are those sophisticated techniques that the post-industrialized world has come to depend on for its high-energy-use and capital-intensive products. NTIS has always supplied this information, based on the latest scientific research and development, and will continue to do so in the future.

On the other hand, in this developing country program, NTIS is concentrating on appropriate technology. In the usage of the term, a technology is said to be appropriate when it is compatible with the economic and social conditions of its users. In the context of less-developed economies, this often means low-cost, light-capital, intermediate-level, or alternative technologies. Appropriate technologies are often designed to meet the needs of low-income groups and usually have the following characteristics:

- They can be operated and maintained locally.
- They are labor-intensive.
- They use available energy sources.
- They make maximum use of local resources and skills.
- They mesh with local cultural values and needs.

During the past year, NTIS has become a major source and a clearinghouse for information on appropriate technology. The information covers agriculture, rural development, management, small business administration, health, construction engineering, energy, and virtually all other categories of technology.

Because of the wide range of LDC information needs, NTIS acquires documents and information with special relevance to the needs of developing economies and especially information originating in the developing countries themselves.

As part of a project funded by USAID/LA/DR, a variety of international organizations were contracted to discuss ways of cooperating in the exchange and use of appropriate technology information. Among these organizations were:

- Appropriate Technology International (ATI)
- Volunteers in Technical Assistance (VITA)
- Intermediate Technology Development Group (ITDG)
- Association of Geoscientists for International Development (AGID)
- (U. S.) National Center for Appropriate Technology (NCAT)
- Technical Assistance Information Clearinghouse (TAICHO)

Negotiations were made with VITA and ITDG about acquiring several of their manuals and translating some into Spanish, French, and Arabic.

With respect to appropriate technology groups in developing countries, NTIS has contacted several groups and has worked with the cooperating agencies to identify and target others. On this latter point, NTIS has also acquired directories and mailing lists of groups and individuals working in appropriate technology and related areas (rural development, technology transfer, etc). An initial worldwide mailing to 15,000 names has been made to inform potential users of this project. A second mailing targeted to appropriate technology groups (approximately 1,000 worldwide) was made in July both to obtain appropriate technology input and to extend the NTIS program to groups working more closely with low-income populations.

Another area of activity has been to investigate other sources of appropriate technology in the industrial countries for inclusion in the NTIS data base. Several sources have been contacted, including OAS, FAO, UNIDO, GPO, universities (for example, Georgia Tech, Denver Research Institute, University of Arizona, University of California at Davis, Cornell), and other nations' development agencies.

To improve user awareness of and access to appropriate technology information, an Appropriate Technology Reference Guide was prepared. Distribution has

been made to all cooperating agencies, to subagencies, and to participants in the information systems workshops. This guide introduces the concept of appropriate technology and identifies sources of information outside the network (for example, VITA, ITDG, GRET, Brace, etc).

Other milestones during the year included:

- A contract was let to Volunteers in Technical Assistance to search the bibliographic data file's 800,000 citations to identify those classed by USIA as appropriate technologies.
- Negotiations were begun between NTIS, its commercial representative in Japan, Mitsubishi Research Institute (MRI), and the Institute of Developing Economies (IDE) in Tokyo. This agreement would add Japanese appropriate technology information from IDE to the network resources.
- Field trips were made to Haiti, the Dominican Republic, Panama, Costa Rica, El Salvador, and Guatemala to develop appropriate technology dissemination projects with local groups.
- A request form for appropriate technology materials was distributed to the cooperating agencies. A fund to subsidize appropriate technology dissemination is available through the USAID/LA/DR project.
- The Intermediate Technology Group of London, United Kingdom, expressed interest in adding ITG material to the NTIS file. Some 30 appropriate technology classics will be made computer retrievable and permanently available in microfiche; many will be translated into Spanish and French.
- COLCIENCIAS, the cooperating agency in Colombia, formally launched a national program of acquisition and promotion of appropriate technology documentation using the NTIS system. The Fondo Colombiano de Investigaciones Cientificas (COLCIENCIAS) has approved the implementation of an appropriate technology component within its network.
- An appropriate technology training course, sponsored by AID/ Appropriate Technology International and Volunteers in Technical Assistance, was given. It was attended by Eugenio Gobatto from Centro Mezo-Americano de Estudios sobre Tecnologia Appropriada (CEMAT) in Guatemala, Hernan Martinez from the Pan American Agricultural School, and Tito Hernandez from the Centro de Informacion Industrial (CII). The last two were both from Honduras. CII is the cooperating agency in Honduras. CEMAT is a major NTIS appropriate technology source. This group visited NTIS to learn about NTIS activity in appropriate technology.

- A joint NTIS/Peace Corps program was developed to establish appropriate technology centers within eight NTIS cooperating agencies using Peace Corps volunteers to supplement staff resources.
- Negotiations were undertaken with the Peace Corps to acquire appropriate technology documents for the bibliographic file.
- 2,500 appropriate technology documents were acquired from the Development Project Management Center of the U. S. Department of Agriculture for input to the NTIS system.
- USAID/DSB/DIU Information Branch was approached to offer NTIS services in cataloging, abstracting, announcement, and distribution of all USAID documentation. Many French language documents from the defunct TRAC program were made available. Efforts for increased cooperation are on-going.
- In a visit to the Escuela Politecnica, Quito, Ecuador, NTIS obtained an agreement to establish a subagency for appropriate technology programs in that country. A similar arrangement was worked out with the Instituto Tecnologico de Costa Rica.
- Special forms, the NTIS Document Evaluation Forms, have been designed and distributed. All cooperating agencies are now returning them to NTIS monthly to show the usefulness of each appropriate technology report requested.

6

COMMUNICATIONS MEDIA

In truth, the overall goal of the Developing Country Staff is one of communication. With varied projects operating in some 90 countries among some 40 organizations, frequent communication is essential. The cooperating agency network simply provides a mechanism for developing countries to communicate with one another--to tell of successful resolutions of local problems that could benefit other nations. In addition, it serves to get the best of the world's technology into worldwide application much faster than traditional methods have ever been able to do.

The following sections describe several such tools developed to ensure frequent and open communication among network participants and information users in developing countries and U.S. government missions overseas.

ACCESS TO INFORMATION FOR DEVELOPMENT

This is a periodic bulletin for members of the USAID information network and USAID missions overseas. It details upcoming activities such as seminars, conferences, or regional meetings and provides information about cooperating agency activities and U.S. scientific and technological information products and services.

During the year, Access was published three times. The first two editions were entitled INTINET. The more descriptive title, Access to Information for Development, was adopted to reflect the reason for the network's existence.

The main purpose of Access is not only to bring NTIS, as the central node of the network, closer to its cooperating agencies, but also to promote interagency awareness and cooperation. These objectives can be accomplished by the regular

publication of articles explaining new developments in AID programming or other U. S. scientific and technical information activities. Other articles focus on the activities of the cooperating agencies themselves; for example, the institution of a new cooperating agency in an AID project country, or current programs they may have undertaken that relate to the project. Additional broadsides with the Access banner announce new products and services (from NTIS and elsewhere) as they become available.

To emphasize appropriate technologies, a regular column on worldwide appropriate technology resources appears in each edition. Input from other individuals associated with different aspects of the network (acquisitions, case studies, training courses) are also highlighted.

NETWORK BROCHURE

A brochure describing the network was produced during the second quarter. It is designed to introduce the project to those unfamiliar with its goals and activities. The brochure was distributed to current and prospective cooperating agencies and USAID missions. It was used in field visits by NTIS and U. S. embassy staffs. A revised edition was prepared and will be published during FY 79.

THE WORLD OF NTIS

This videotape was also produced during the second quarter. It was created to introduce NTIS to project country users and potential users. It is for use by the cooperating agencies and U. S. embassies in explaining the function of NTIS, the project, and the use and value of technical information. This work was financed by NTIS. Translations were done in Spanish and in French.

APPLICATIONS OF MODERN TECHNOLOGY TO INTERNATIONAL DEVELOPMENT

NTIS also publishes a monthly newsletter for international readers that announces selected products and services of specific interest to developing countries. It is published in English, Spanish, and French versions. More than 20,000 copies are distributed each month. This provides a free announcement tool, which USAID missions

or network participants can give to any interested party. If no local agency is operating in a country, NTIS mails direct to information users. The Spanish edition is translated, printed, and bulk distribution accomplished by the Mexican cooperating agency, INFOTEC/CONACYT (Servicio de Informacio Tecnica). English and French editions are produced and distributed from Washington, D. C., to individuals and to network participants. Subscriptions to AMTID have thus increased threefold over the past year.

7

WORKSHOP/TRAINING PROGRAM

Twice each year--in April and September--a group of from 10 to 15 librarians and technical information managers from around the world come to the NTIS headquarters in Washington, D. C. , for a two-week, hands-on, intensive workshop on technical information systems. The course presents an insider's view of how NTIS operates, how to make it work better for themselves and their countries, how to take full advantage of its collections when they return home, and how they can introduce similar systems in their own operations.

Members of other LDC organizations are also invited to attend, providing they pay their own way. The principal objectives of the program are:

- (1) To introduce modern information handling and dissemination techniques that may be useful to the cooperating agencies. (Particular attention is given to methods of promoting the use of scientific and technical information.)
- (2) To provide a forum through which cooperating agency staffs can exchange experiences in the operation of scientific and technical information dissemination services in developing countries.
- (3) To acquaint cooperating agency staffs with other U. S. scientific and technical information resources through site visits and guest lecturers.
- (4) To provide an in-depth familiarization with the workings of NTIS and its products and services.

During the current fiscal year, sessions were held from March 14 through 31 and from September 18 through 29. The March session included 10 participants; the September session had a total of 12 attendees.

So far, the workshop has attracted information managers from Bolivia, Chile, Colombia, Costa Rica, Dominican Republic, Ecuador, Egypt, El Salvador, Guatemala, Honduras, India, Indonesia, Jordan, Korea, Mexico, Nicaragua, Nigeria, Panama, Peru, Philippines, Sri Lanka, Taiwan, Thailand, Trinidad, Venezuela, Zaire. For the most part, these professionals came from information organizations worldwide that participate in AID-supported programs.

The workshop has proven itself invaluable in helping to set up technical information systems overseas. Former participants frequently write to workshop session leaders, praising the helpfulness and value of the course and seeking further guidance.

Since the beginning of this education series in 1974, constant efforts have been made to improve the program structure and course content. One way that this has been done is by asking participants to evaluate the program. These evaluations are carefully considered in planning subsequent sessions. Moreover, during the September 1978 session, a professional training consultant monitored most of the proceedings. Suggestions made in the consultant's report will be incorporated into future sessions.

Presentations given at the workshop sessions are being developed into video scripts. These will be transferred into training films (in 8 mm. film, 16 mm. film, and videotape formats) for distribution to the cooperating agencies.

A workbook has also been developed as a course aid. It will be translated into Spanish and French.

During the fiscal year, a course brochure was developed to explain its purpose and participant requirements to prospective students.

8

REGIONAL DIRECTORS' CONFERENCES

After three years of operation, the cooperating agency network was faced with a new set of policy alternatives. It was decided that a meeting with the regional directors would be a good forum for dealing with the network's future. Two such meetings were planned, one in Ecuador, one in Korea. Their objectives were:

- (1) To consider new policy directions in the USAID/NTIS program and to examine the impacts of these new policies and alternative approaches to fulfilling their objectives.
- (2) To review key activities of each cooperating agency, with an eye toward improving the quality and scope of services rendered both by NTIS and the agency.

SALINAS, ECUADOR

The first conference, for Latin American regional directors, was held in Salinas, Ecuador, April 10 through 12. Those countries that have graduated from the AID program (that is, those that are no longer eligible to receive AID funding) were selected as possible conference hosts for two reasons: (1) it would give the graduate cooperating agency the opportunity to demonstrate its commitment to the program by actively contributing to conference arrangements, and (2) it would also allow AID to reconfirm its continuing interest in that country.

The Salinas conference was originally scheduled for February. However, the short time available for preparations and the other obligations of the attendees during that month forced NTIS to delay the meeting until April. From the outset, Dr. Victor Martinez of CENDES expressed great enthusiasm in the proposed

meeting, and was willing to provide the necessary logistical support.

Invitations were sent out to 12 Latin American cooperating agencies. Acceptances were received from all, except for CONICIT in Costa Rica. Sra. Valenzuela, chief of the NTIS Information Department, was obliged to attend the Fifth Inter-American Congress of Agricultural Libraries to be held in San Jose during the time of the Salinas conference.

An official visit was made to Ecuador in February by Mrs. Adele Hilton, NTIS program specialist. Arrangements were discussed with Dr. Martinez, and an on-site visit was made to the hotel in Salinas at which the conference would take place.

An agenda of discussion items was prepared for each day of the conference. Most of the items focused on the new elements of the NTIS/AID LA/DR program. These included case studies, submittal of quarterly agent reports, acquisition of appropriate technology materials, among others. Each attendee was sent an advance copy of the agenda. Suggestions were solicited from the participants for incorporation into the agenda.

An expanded version of the agenda was prepared, reviewing each topic in terms of how NTIS would approach each issue and the responsibilities of the cooperating agencies in setting up a coherent plan of action.

Participating in the conference were:

Norka Petit REDINIARA Caracas, Venezuela	Pedro Garcia CENAP San Salvador, El Salvador
Carlos Garvizu Centro de Informacion La Paz, Bolivia	Maria Orellana INTECAP Guatemala City, Guatemala
Margarita Barraza INTEC/CORFO Santiago, Chile	Jorge Cepeda INFOTEC/CONACYT Mexico City, Mexico
Isabel Forero de Moreno COLCIENCIAS Bogota, Colombia	Francisco Vega CENIT Managua, Nicaragua
Victor Martinez CENDES Guayaquil, Ecuador	Emiliano Otero and Mr. Novoa Novoa Ingenieros Lima, Peru

**Terrance Lindemann, Frank Post, Richard Garcia
NTIS**

**Helen Ortiz
LAC/DR/HRD**

SEOUL, KOREA

The second conference was held in Seoul from May 29 to 31. The cooperating agency in Korea and the Korean Scientific and Technological Information Center (KORSTIC) hosted the conference.

Korea was chosen as the site of the conference to conform to the general AID policy of continuing to cooperate with graduate countries on a regional basis wherever possible. This site also had an advantage in that the directors of our cooperating agencies would be able to examine closely the operations of KORSTIC, which has been the most successful cooperating agency in the USAID network.

Conference arrangements were coordinated during a visit to Seoul in February 1978 by Vietta Dowd. Invitations were sent to directors of the six Asian cooperating agencies; all but one (the director of PASTIC) accepted.

An agenda of discussion items was prepared for each day of the conference. Most of the items focused on the new elements of the NTIS/AID DSB/DIU program. These included case studies, submittal of quarterly agent reports, acquisition of appropriate technology materials, among others. Each attendee was sent an advance copy of the agenda. Experience from the Latin American conference shaped much of the final planning, which included session leadership assignments to the cooperating agencies.

Participating in the conference were:

**Dr. Ajva Taulananda
TMA (Thailand)**

**Neboysha Brashich
AID/Seoul**

**Vietta Dowd
NTIS**

**Richard Garcia
NTIS**

**N.U. Yapa
SL/STIC (Sri Lanka)**

**Doo-Hong Kim
KORSTIC (Korea)**

**Terrance Lindemann
NTIS**

**Luwarsih Pringgoadisurjo
PDIN (Indonesia)**

Lee White
AID/DSB/DIU

(Dr. Alfred Tong, TRC [Philippines] was forced to cancel at the last moment because he was asked by President Marcos to install a computer terminal in his office so he could access U.S. data bases.)

All participants agreed that the conference was a worthwhile exercise and that it should be made an annual event. The next conference was tentatively set for spring 1979 in Bangkok.

9

RESEARCH IN CASE STUDIES

As usual, palpable benefits of any such program have historically gone undocumented. To address this problem, examples of the effect of technology acquisition on local problems are being collected by NTIS with cooperating agency cooperation. To date, case study research has covered a wide range.

Although this task is the responsibility of the Washington NTIS office, the cooperation of each agency was critically important. For this reason, a special effort was made to collect from them the following elements of each case study:

- (1) background or context of the project;
- (2) bibliography of documents used;
- (3) application of technical information;
- (4) consultancy, financing, or other relevant inputs to the activity's development;
- (5) results and impact; and
- (6) recommendations.

To the extent that it is convenient, the cooperating agencies are urged to provide as much of the information above as they can. The minimum requirement is to list the location and documents ordered. Then, in the event of a field visit, interviews with the person who used (not necessarily the one who ordered) the information can be arranged.

Here, for example, is a case researched by Novoa Ingenieros, the cooperating agency in Peru:

In the Peruvian mountains in the region of Puno, a project is being carried out to set up a factory to process bitter potatoes.

The bitter potato is a tubercule that grows approximately at 3,800 meters above sea level and contains high amounts of glycoalkaloid, which is toxic and gives a bitter taste; it is not directly edible.

The process of removing the bitterness and making it edible consists of extracting the glycoalkaloid. This process has been taking place since the time of the Inca empire in a very primitive manner and in small quantities. Each family processed the potatoes needed for its own consumption.

Under the request of the Empresa de Propiedad Social "Kunurama" (worker-owned enterprise) and in coordination with the Department of Agriculture, Novoa Ingenieros is developing the project to install a factory to process the bitter potatoes industrially, taking into consideration the geographic conditions, the energy problem in Puno, and the excessive availability of manpower.

One of the most interesting aspects of the project is the use of energy generated in a nonconventional manner, such as the use of windmills, solar collectors, and solar dryers. The design of equipment to be used was done with the aid of information made available by NTIS.

Further research was done in Korea, El Salvador, Ecuador, Colombia, and Venezuela (August 20 to September 18). Some 34 individuals were interviewed in some 19 organizations, including universities.

10

USER-EDUCATION SEMINARS

The idea here is to increase the use of U. S. technical information by sponsoring seminars in project countries between cooperating agencies and their own local end-users.

The first of these user-education seminars was held during the fiscal year. The seminars are organized by cooperating agencies and with AID LA/DR and DSB/DIU project support (the cooperating agencies are expected to pay part of the cost). The specific purpose of the seminars is to provide information end-users with (1) an introduction to the scientific and technical information resources available to them through the cooperating agency in their country, and (2) an in-depth familiarization with scientific and technical information products and services available through the cooperating agency. Emphasis is placed on creating a general awareness of the value of information in various endeavors.

The first series of seminars took place in the Philippines, Thailand, and Sri Lanka. Vietta Dowd coordinated the series and represented NTIS at each of the seminar series.

In Manila, Philippines, the seminars were organized by the Technology Resources Center (TRC). A total of four sessions were held from June 6 to 7, with 30 to 35 persons attending each session. TRC had just achieved a capability of searching the NTIS computerized data base on-line from Manila, and this capability was demonstrated during each session. Attendant publicity reached Philippine President Marcos, who requested and received a personal demonstration. He was sufficiently impressed to place an immediate order for items called up on the NTIS file.

The next seminar in the series was held in Colombo, Sri Lanka, on June 16. It was hosted by the Sri Lanka Scientific and Technical Information Center (SLSTIC) in conjunction with that organization's joining the program. About 35 head librarians from various Sri Lankan scientific and technical institutes attended. Similar sessions in Peru and the Dominican Republic were attended by 100 people each. Other sessions are tentatively scheduled for the spring of 1979.

Approximately 150 business executives, government officials, and academics attended a session held on June 22 in Bangkok, Thailand. This activity was our first cooperative with our new cooperating agency in Thailand, the Thai Management Association. Representatives of the Asian Institute of Technology joined in giving presentations at this session.

In all, this first series of user-education seminars revealed an unexpectedly great eagerness on the part of audiences to learn of the information resources available to them. This would, in fact, seem to be a fruitful area for program expansion--both in terms of the numbers and kinds of people reached and in terms of the information resources covered.

In a related in-country development, the Asian Institute of Technology has recently inaugurated a new U.S.-donated computer facility. During this reporting period, NTIS and AIT arranged for an experiment to make the NTIS bibliographic data file available to information users in Southeast Asia. The intent is that this data base serve as a nucleus for our on-line retrieval system. Programming and testing are now being done by AIT under the management of Dr. Jacques Valls, director of the Regional Library and Documentation Center, AIT.

11

SPIN CONFERENCE

Terrance Lindemann was part of the U. S. delegation to the Intergovernmental Conference on SPIN (Strategies and Policies for Informatics). The SPIN conference was held in Torremolinos, Spain, and was sponsored jointly by UNESCO and the IBI (Intergovernmental Bureau for Informatics).

Mr. Lindemann's speech to the delegates was to contribute to the debate on basic prerequisites for the effective use of informatics. In it, he described NTIS and its international operations and invited more international use. Attendees were attracted to the notion of the cooperating agency and impressed with the concept of regional networking and on-line data systems hooked up via telephone lines.

12

INTERNATIONAL COMMUNICATION AGENCY PROJECTS

PROJECT INFO/SPEED

The U. S. International Communication Agency contracted NTIS to conduct a series of demonstrations in an area that lies on the very frontier of what is technically possible: Remote, on-line information retrieval from developing countries. More specifically, the project involved the real-time interaction with computer data files (primarily the NTIS data base) located in California from a portable terminal brought to project countries.

In all, Project Info/Speed was demonstrated to 50 audiences in 11 countries around the world. Five in FY 77: Jeddah, Saudi Arabia; Madras, India; Cairo, Egypt; Lagos, Nigeria; Nairobi, Kenya. And six in FY 78: Panama City, Panama; Lima, Peru; Buenos Aires, Argentina; Brasilia, Campinas, and Sao Paulo, Brazil; Jakarta, Indonesia; and Hong Kong. Audiences included at least one president of a country (Panama) and numerous cabinet-level officials. The project has conclusively demonstrated, for the first time, that on-line information retrieval from remote areas is immediately practical via telex hook-ups and is technically feasible (the main limitation being cost) via telephone communication systems.

Frank Post, international program consultant to NTIS, had primary responsibility for the project. He was assisted in the field by Don Black of Systems Development Corporation. A final report on the project has been completed.

Network cooperating agencies were active in the demonstrations in Peru and Brazil. Candidates for network participation were contacted during the demonstrations in Panama and Hong Kong. And a special session in Jakarta witnessed

the signing of a bilateral agreement between NTIS and LIPI/PDIN. The session was televised and shown on national television three times.

EXHIBITS

Ivory Coast

John Hounsell demonstrated on-line computer searching in Abidjan, Ivory Coast, for the International Communications Agency (ICA--formerly USIA) exhibit, "Science and Technology--Path to Progress." While there, Mr. Hounsell explained NTIS products and services to many foreign government ministers, university professors, researchers, and other professionals. He also sought to establish program contacts in Francophone Africa.

Lagos, Nigeria

Vieta Dowd demonstrated microfiche readers and printers at the December 1977 Trade Fair in Lagos. For 15 days, as many as 15,000 people each day reviewed the NTIS exhibit. Consultations were also made with members of the FIR Technical Information Center and Library.

Appendix A

TABLES

Table A-1
DEMAND FOR NTIS REPORTS, dollars

Country	Total Demand FY 77	Total Demand FY 78	Percent Increase
Bolivia	\$ 2,165.50	\$ 1,035.50	-52.18
Brazil*	42,260.82	46,900.01	10.98
Chile*	10,493.45	9,959.05	-5.09
Colombia	3,077.90	5,207.56	69.19
Costa Rica	939.06	1,871.71	99.31
Dominican Republic	321.23	2,904.84	804.29
Ecuador	4,636.83	4,089.59	-11.80
El Salvador	393.00	951.75	142.18
Guatemala	3,508.50	2,790.10	-20.47
Honduras	1,381.01	2,382.10	72.49
India*	80,535.91	79,777.19	-0.94
Indonesia	4,957.18	7,668.94	54.70
Korea*	25,347.42	38,836.39	53.22
Mexico*	22,951.26	27,982.99	21.92
Nicaragua	1,498.76	2,467.52	64.64
Nigeria*	402.00	152.25	-62.13
Pakistan	8,266.18	1,759.55	-78.71
Panama	986.52	1,934.03	96.05
Peru	8,797.66	12,925.62	46.92
Philippines	4,341.50	3,634.38	-24.93
Sri Lanka	5.75	246.50	4,186.96
Thailand	7,252.75	8,991.40	23.97
Venezuela	15,717.76	11,834.24	-24.17
Latin America and Caribbean	119,129.26	135,236.88	13.52
Africa, Asia, and Near East	131,698.69	141,066.60	7.19
Grand Total	\$250,737.95	\$276,303.48	10.20

*AID graduate as of September 1978.

Table A-2
NUMBER OF REPORTS REQUESTED

Country	Total Demand FY 77	Total Demand FY 78
Bolivia	48	26
Brazil	2,872	1,875
Chile	546	730
Colombia	314	453
Costa Rica	72	103
Dominican Republic	35	99
Ecuador	376	281
El Salvador	51	16
Guatemala	205	219
Honduras	53	23
India	6,489	4,495
Indonesia	230	553
Korea	1,542	3,620
Mexico	2,169	2,695
Nicaragua	29	12
Nigeria	43	14
Pakistan	365	69
Panama	104	78
Peru	816	233
Philippines	763	262
Sri Lanka	1	24
Thailand	517	489
Venezuela	1,256	603
Latin America and Caribbean	8,946	7,446
Africa, Asia, and Near East	9,950	9,526
Grand Total	18,896	16,974

Appendix B

COUNTRY-BY-COUNTRY PROFILES

BRAZIL

COOPERATING AGENCY:

Barroslearn, Producoes Didaticas, Ltda.
Rua 24 de maio, 62
Caixa Postal 6182
Sao Paulo, SP
Cep. 01000

Director: J. B. Paes de Barros
Chief, NTIS Project: Adelaide Paes de Barros

BOLIVIA

COOPERATING AGENCY:

Direccion General de Normas y Tecnologia (DGNT)
Casilla 4430
La Paz

Director: Mr. Hugo Caceres
Chief, NTIS Project: Ing. Carlos Garvizu T.
Jefe, Centro de Informacion
U.S. Aid Mission Liaison: Richard Archi

CENTRAL AMERICA

COOPERATING AGENCY:

Instituto Centroamericano de Investigacion y Tecnologia
Industrial (ICAITI)
Division de Documentacion e Investigacion
Avenida La Reforma 4047, Zona 10
Apartado Postal 1552
Guatemala

Chief, NTIS Project: Rocio Marban

U.S. AID Mission Liaison: Robert Hechtman
ROCAP Program Chief

CHILE

COOPERATING AGENCY:

Instituto de Investigaciones Tecnologicas
(INTEC/CORFU)
Avenida Santa Maria 06500 (Lo Curro)
Casilla 667
Santiago

Chief, NTIS Project: Margarita Barraza C.,
Jefe de Adquisiciones

COLOMBIA

COOPERATING AGENCY:

Fondo Colombiano de Investigaciones Cientificas (COLCIENCIAS)
Carrera 8 No. 133-41
Apartados Aereos 050580 y 29828
Bogota, D.E.

Director: German Escorcía
Chief, NTIS Project: Isabel Forero de Moreno,
Jefe, Division Biblioteca y Documentacion

U.S. AID Mission Liaison: George McClosky
Program Officer

COSTA RICA

COOPERATING AGENCY:

Consejo Nacional de Investigaciones Cientificas y Tecnologicas
(CONICIT)
Apartado Postal 10316
San Jose

Chief, NTIS Project: Zulma Pucurull de Valenzuela

U.S. Aid Liaison: Roberto Rodriguez
Program Officer

DOMINICAN REPUBLIC

COOPERATING AGENCY:

Instituto Dominicano de Tecnologia Industrial (INDOTEC)
Avenida Jose Nunez de Caceres, Esquina Jose Amado Soler
Apartado 329-2
Santo Domingo

Chief, NTIS Project: Enrique Leyba
Deputy Director

U.S. Aid Liaison: John H. Clary
Program Officer

ECUADOR

COOPERATING AGENCY:

Centro de Desarrollo Industrial del Ecuador (CENDES)
Garcia Aviles 217 y 9 de Octubre
Apartado 5833
Guayaquil

Chief, NTIS Project: Dr. Victor Martinez C.

EL SALVADOR

COOPERATING AGENCY:

**Centro Nacional de Productividad (CENAP)
Avenida Espana 732
San Salvador**

Director: Pedro Garcia

**Chief, NTIS Project: Gustavo Valle
Departamento de Informacion**

U.S. Aid Mission Liaison: Peter Askin

GUATEMALA

COOPERATING AGENCY:

Instituto Tecnico de Capacitacion (INTECAP)
Calle 12 y 4^a Avenida, Zona 1
Apartado Postal 2568
Guatemala

Director: Mario Leal P.

Chief, NTIS Project: Sra. Clara Estela Vasquez de Contreras

U.S. Aid Mission Liaison: Bruce Bouchard, Loan Officer
Jeff Allen, Rural Development Officer

HONDURAS

COOPERATING AGENCY:

Centro de Informacion Industrial (CII)
Universidad Nacional Autonoma de Honduras
Tegucigalpa

Chief, NTIS Project: Ing. Hernan Arguello

U.S. AID Mission Liaison: John L. Lovaas
Program Officer

INDIA

COMMERCIAL COOPERATING AGENCY:

Allied Publishers
15 Graham Road
Ballard Estate
Bombay - 400 038

Chief, NTIS Project: S. M. Sachdev

American Embassy Liaison: Thomas Vrebalovich, Science Attache

Country Brief:

NTIS has had robust activity in India from the start of the network project. After some five years of inconclusive negotiations with a GOI agency (INSDOC), NTIS decided to seek commercial organizations. This was necessitated by U.S. AID being withdrawn from India at the request of the GOI.

Allied Publishers Pvt., Ltd. is a publisher, printer, and wholesale book distributor, specializing in scientific and technical books. The biggest distributor in India of this category of books for the last 40 years, it represents most of the important American, British, and continental publishers. Since 1967 the printing division has produced about 60 books a year on its offset presses, for a total of almost 600 titles. Mr. S. M. Sachdev, Director of Allied Publishers Pvt., said, "This agreement between NTIS and Allied will be of great benefit to Indian research institutions and industries, as it will give them easy access to the vast information published on all U.S. Government-sponsored research projects."

The new service to India from NTIS is a manifestation of the October 9, 1974 Agreement between India and the United States to establish a Joint Commission on Economic, Commercial, Scientific, Technical, Education, and Cultural Cooperation.

INDIA

COMMERCIAL COOPERATING AGENCY:

Constellate Consultants
5 Anand Lok
New Delhi -- 110 049

Chief, NTIS Project: Prithee Haldea, Consultant

American Embassy Liaison: Thomas Vrebalovich, Science Attache

Country Brief:

NTIS has had robust activity in India from the start of the network project. After some five years of inconclusive negotiations with a GOI agency (INSDOC), NTIS decided to seek commercial organizations. This was necessitated by U.S. AID being withdrawn from India at the request of the GOI.

Constellate Consultants, Ltd., established in 1976, offers consultancy services in the areas of selection and import of computer technology, establishment of information collection and dissemination systems, and general corporate planning. Now through NTIS, it has expanded its coverage to include most other specialized fields of scientific and technological information services.

The new service to India from NTIS is a manifestation of the October 9, 1974 Agreement between India and the United States to establish a Joint Commission on Economic, Commercial, Scientific, Technical, Education, and Cultural Cooperation.

INDIA

COMMERCIAL COOPERATING AGENCY:

Higginbotham's, Ltd.
165 Anna Salai
Madras - 600 002

Chief, NTIS Project: Mr. V. Balaraman
Director and Manager

American Embassy Liaison: Thomas Vrebalovich, Science Attache

Country Brief:

NTIS has had robust activity in India from the start of the network project. After some five years of inconclusive negotiations with a GOI agency (INSDOC), NTIS decided to seek commercial organizations. This was necessitated by U.S. AID being withdrawn from India at the request of the GOI.

Higginbotham's, Ltd., founded in 1844, does a multimillion dollar business in book imports and has retail outlets in 14 major South Indian cities and in over 50 railway stations.. It is the largest company in South India engaged in wholesale and retail sales of books and periodicals. They arrange many book exhibitions in South India for general and specific publications in educational institutions, seminars, and book fairs.

The new service to India from NTIS is a manifestation of the October 9, 1974 Agreement between India and the United States to establish a Joint Commission on Economic, Commercial, Scientific, Technical, Education, and Cultural Cooperation.

INDONESIA

COOPERATING AGENCY:

Pusat Dokumentasi Ilmiah Nasional (PDIN)
National Scientific Documentation Center
Jl. Jenderal Gatot Subroto
P. O. Box 3065
Jakarta

Director: Mrs. Luwarsih Pringgoadisurjo

Deputy Director for Library Services: Mr. Hernandono

Deputy Director for Development: Mr. Zultanawar

KOREA

COOPERATING AGENCY:

Korea Scientific and Technological Information Center (KORSTIC)
C.P.O. Box 1229
Seoul

Chief, NTIS Project: Kim Doo-hong, Director General
Yoon Koo-ho, Department of Service

U.S. AID Mission Liaison: Dennis Barrett, Director
Neboysha R. Brashich
Assistant Program Officer

MEXICO

COOPERATING AGENCY:

Servicio de Informacion Tecnica/Consejo Nacional de Ciencia
y Tecnologia (INFOTEC/CONACYT)
Apartado Postal 19-194
Mexico 19, D.F.

Director: Jose Quevedo Procel

Chief, NTIS Project: Alberto Garcia Ayluardo

NICARAGUA

COOPERATING AGENCY:

Centro Nicaraguense de Informacion Tecnologica (CENIT)
Banco Central de Nicaragua
Apartado Postal 2552, anco Central
Managua

Director: Francisco A. Vega

Chief, NTIS Project: Francisco A. Vega

NIGERIA

COOPERATING AGENCY:

Federal Institute of Industrial Research, Oshodi (FIIR)
Private Mail Bag 1023
Murtala Muhammed Airport
Lagos State

Chief, NTIS Project: Mrs. Beola Ariyo
Office of the Director of Research

PAKISTAN

COOPERATING AGENCY:

Pakistan Scientific and Technical Information Centre (PASTIC)
Sub-Centre
142-C/II P.E.C.H.S.
Karachi 29

Chief, NTIS Project: Miss Shamin Farrukh
Translation Officer

U.S. AID Mission Liaison: None. Previous contacts have
been transferred to other posts.

PANAMA

COOPERATING AGENCY:

Centro para el Desarrollo de la Capacidad Nacional en la
Investigacion (CEDECANT)
Estafeta Universitaria
Universidad de Panama
Panama

Director: Dr. Alfredo Soler B.

Chief, NTIS Project: Nitzia Barrantes

U.S. AID Mission Liaison: Robert E. Jordan
Office of Development Planning

PERU

COOPERATING AGENCY:

Novoa Ingenieros Consultores (NIC)
Las Camelias 780, Piso 7
San Isidro
Lima 27

Director: Alfredo Novoa Pena

Chief, NTIS Project: Emiliano Otero
Division Tecnologica .

U.S. AID Mission Liaison: "Eddie" Alarcon, Program Officer
Janice Weber, Project Officer

PHILIPPINES

COOPERATING AGENCY:

Technology Resource Center (TRC)
TRC Building
Buendia Avenue Extension
Makati
Rizal

Director: Dr. Alfred E. Tong

Chief, NTIS Project: Mila Velez

U.S. AID Mission Liaison: James Baird, Program Officer

SRI LANKA

COOPERATING AGENCY:

National Science Council of Sri Lanka
Sri Lanka Scientific and Technical Information Center (SLSTIC)
47/5 Maitland Place
Colombo 7

Chief, NTIS Project: Mr. N. U. Yapa
Head Librarian

U.S. AID Mission Liaison: None. Tom Aradt has returned to
the U.S.A.

Country Brief:

Sri Lanka had had no active participation with NTIS/AID until SLSTIC joined the network. No transactions have been logged by NTIS since 1974. Few copies of AMTID had been distributed. This was because of strict foreign currency controls, a lack of orientation to the U.S. S&T community. SLSTIC agreed to participate in the program at the end of the second quarter.

THAILAND

COOPERATING AGENCY:

Thai National Documentation Centre (TNDC)
196 Phahonyothin Road, Bangkok
Bangkok

Director: Mrs. Chalermvarn Choosup

Chief, NTIS Project: Mrs. Ratchanee Kanchanomai

U.S. AID Mission Liaison: William Fleming

VENEZUELA

COOPERATING AGENCY:

RED de Informacion en Ingenieria, rquitectura 6 Afines (RIAA)
Colegio de Ingenieria en Venezuela
Apartado de Correos 2006
Caracas

Director: Anibal Gomez Mantellini

Chief, NTIS Project: Norka Petit