

BIBLIOGRAPHIC DATA SHEET

1. CONTROL NUMBER
PN-AAH-873

2. SUBJECT CLASSIFICATION (695)
TA00-0000-0000

3. TITLE AND SUBTITLE (240)

An action plan to establish an appropriate technology network

4. PERSONAL AUTHORS (100)

5. CORPORATE AUTHORS (101)

Volunteers in Technical Assistance

6. DOCUMENT DATE (110)

1980

7. NUMBER OF PAGES (120)

235p.

8. ARC NUMBER (170)

609.V943

9. REFERENCE ORGANIZATION (130)

VITA

10. SUPPLEMENTARY NOTES (500)

11. ABSTRACT (950)

12. DESCRIPTORS (920)

Surveys
Resources
Information systems
Technology transfer

Appropriate technology
Networking
Models

13. PROJECT NUMBER (150)

14. CONTRACT NO.(140)
AID/DSAN-C-0200

15. CONTRACT
TYPE (140)

16. TYPE OF DOCUMENT (160)

6-11 .
V 443

AN ACTION PLAN TO ESTABLISH AN APPROPRIATE
TECHNOLOGY NETWORK

USAID Contract No. AID/DSAN-C-0200

Submitted by:

Volunteers in Technical Assistance
3706 Rhode Island Ave.
Mt. Rainier, Maryland 20822

March 31, 1980

EXECUTIVE SUMMARY

Under contract with the U.S. Agency for International Development (Contract No. AID/DSAM-C-0200), Volunteers in Technical Assistance (VITA): (1) designed a research program to assess the state of AT development, (2) carried out a survey to assess the state of development, (3) collated and analyzed the data from the survey, and (4) produced a set of recommendations providing alternative models and corresponding action plans for improving networking capabilities at national, regional, and global levels.

The survey which VITA undertook gathered data from 418 organizations and individuals in relation to (1) the resources currently being devoted to AT development, (2) the constraints which hinder this development, (3) the additional resources which are seen as necessary to overcome these constraints, and (4) the best means perceived to deliver these needed resources. Results from the survey show that:

- Practitioners at all levels of AT development want three resources: (1) information, including project experiences, (2) experts to provide technical assistance, and (3) funding.
- Practitioners attempt to satisfy their resource needs through diverse formal and informal networking.
- Problems in this networking effort include; (1) lack of knowledge about which additional resources are available, (2) delays in information transfer, (3) information, if obtained, is unsuitable for local conditions, and (4) high cost and foreign exchange problems inhibiting resource acquisition.
- Practitioners are not coordinating their efforts, leading to isolation or non-implementation, due to the inability to assemble all of the necessary resources for AT development.
- Practitioners want AT information to be available to everyone at a reasonable cost, or to be free.
- Practitioners in all phases of AT development desire the establishment of some form of national and international structures for sharing of resources and coordination of activities.

In this report, VITA makes the following recommendations:

- National networks of organizations and individuals involved in AT development be organized, in order to maximize local and national resources. Where such national networks already exist, they should be strengthened and supported.
- Within these national networks, a lead agency/focal point should be established, in order to allow those without resources to know of a place to initiate the solution seeking process. Where such a lead agency has already been established, it should be strengthened and supported. If no such agency has been designated, the method of selecting such an agency should be developed by the network participants.
- National networks would facilitate access to local and national technical and programmatic information, experts, and potential funding sources.
- For participants in national networks who wish to establish coordination and cooperation with other national networks on a regional basis, regional networking would be encouraged. If such a network is already functioning, its resources might be strengthened and further supported.
- For national and regional networks that wish to establish coordination and cooperation with other national and regional networks at a global level, a central service unit would be developed. Selection and structuring of such a unit would be left to the network participants. This central service unit would facilitate exchange between national and regional AT participants.
- Research and Development Institutes, on-line data bases, and other technical information/documentation centers would be brought into this network, to technically "backstop" network participants.
- In order to establish a capacity for rapid transmission of documents and drawings, as well as requests for assistance, telex and telecopier system would be used to link national, regional and the central coordinating units.

ACKNOWLEDGEMENTS

PERSONNEL

Helen K. Kolbe
Project Director

Henry Norman
Executive Director

Eric Lipsetts
Project Manager

Survey Team

Sandra Atkins
W. R. Breslin
George Codrea
Emily DiCicco
Whitney Garberson
Eric Lipsetts
Brij Mathur
Rosalinda Garcia-Yangas

VITA Staff

Janet Alarcon
W. R. Breslin
Mary Cocke
George Codrea
Maria Coirolo
Maria Garth
Linda Geisler
Maire-Noëlle Griest
Eric Lipsetts
Betty Ziebell

Consultants

Laurie Adler
Richard DiCicco
David Hess

VITA wishes to thank the following people whose time and efforts contributed to the preparation of this study:

Laurel Druben
William Ellis
Pat Gainer
Suzanne Gell
Earl Lawrence
Paul Osborn
Ross Thomas

We particularly want to acknowledge the support and encouragement we received from those organizations and individuals around the world, who participated in this survey. The time, effort and warm response they gave makes us especially eager to see this initiative continue.

TABLE OF CONTENTS

EXECUTIVE SUMMARY

ACKNOWLEDGEMENT

TABLE OF CONTENTS

LIST OF TABLES

INTRODUCTION.....	p. 3
MODEL FOR AT DEVELOPMENT.....	p. 6
METHODOLOGY.....	p. 11
USE OF RESOURCES: SURVEY RESULTS.....	p. 18
PROGRAM OPTIONS.....	p. 29
PROPOSED NETWORK ROLE IN AT DEVELOPMENT: SURVEY RESULTS.....	p. 34
STRUCTURE AND FUNCTIONS OF AN INTERNATIONAL AT NETWORK.....	p. 44
RECOMMENDATIONS: MODELS, CRITERIA, AND ACTION PLANS.....	p. 75
NETWORK MANAGEMENT EVALUATION PARAMETERS.....	p.119
ADDENDUM.....	p.122
APPENDICES:	
1) Survey Results: Tables.....	p.125
2) Action Plan Leader Agency Profiles.....	p.158
3) Survey Respondents.....	p.171
4) Survey Instruments.....	p.139
5) Data Base Descriptions.....	p.211

LIST OF FIGURES

Figure 1 - Model for Appropriate Technology Development	P. 10
Figure 2 - Program Options	P. 33
Figure 3 - Launching Models	P. 83

LIST OF TABLES

Table 1 - In-house resources	p. 125
Table 2 - Resources acquired from external sources	p. 128
Table 3 - Sources of external resources	p. 131
Table 4 - Problems	p. 133
Table 5 - Resource, needs and wants	p. 136
Table 6 - Format for desired resources	p. 139
Table 7 - Special end-user run I	p. 141
Table 8 - Opinion of network idea	p. 144
Table 9 - Interest in participation	p. 146
Table 10- Services offered	p. 148
Table 11- Conditions upon participation	p. 151
Table 12- Special end-user run II	p. 154
Table 13- Preferred network structure	p. 156

SECTION 1: INTRODUCTION

INTRODUCTION

VITA has provided technical solutions to local development problems for twenty years; recently there has been a substantial increase in appropriate technology (AT) activities. Within this time, the concept of appropriate technology has gone through many permutations and definitions under a variety of names (i.e., small-scale, intermediate, labor intensive, capital saving technologies). In some instances, in fact, so-called advanced or capital intensive technologies have been considered appropriate if they are responsive to end-user needs and compatible with the environment in which they are utilized.

While divergent views exist on a definition of AT, one fact is clear: there has been an increased awareness of the necessity for a sensitive approach in meeting basic human development needs.

AT tends to share a number of common features when applied to developing countries. In general, appropriate technologies:

- Are developed out of the interaction of the various groups and individuals which make up the community in which the technologies are to be introduced;
- Promote job creation and meaningful work through the design and introduction of labor-intensive equipment and approaches, especially those involving decentralized, small-scale production units;
- Can be operated and maintained within the given community;
- Emphasize self-reliance through maximizing the use of local resources, materials, and expertise, and through the selective importation of foreign technologies which have proven appropriate;
- Can be afforded by the individuals, groups, businesses, or countries for which they are intended;

- Take into account all factors related to increased productivity before beginning a production enterprise;
- Are based upon local environmental and ecological systems with minimal adverse impact on these systems; and
- Encourage community members to recognize and expand their own abilities, knowledge, and skills in meeting their own needs.

Therefore, appropriate development consists of change occurring as a result of needs and actions generated from within a group, village, or society. It is meaningful, lasting development made possible through the use of technologies which both fit local contexts and spur further change.

With the increased awareness and activity in the use of appropriate technologies, there has been a subsequent demand for information on "know-how," expertise, adaptation, replicability, etc., regarding these technologies. Similarly, as the number of AT practitioners grow, an abundance of both practical and technical information has emerged that is of value to others. Resource sharing has become a logical extension of development efforts to communicate the worth of AT.

Through discussion with members of the AT community, VITA gained insight into their opinions on the establishment of an international network structure. Networking was proposed as the decentralized coordination, cooperation and exchange of resources. The valuable information which was gleaned from their insights, suggestions and advice helped to comprise the proposal for this study. To further substantiate the network approach, two VITA staff members attended the United Nations Conference on Science and Technology for Development (UNCSTD) in August, 1979, to share this idea. These discussions and informal research efforts culminated in this study, which was supported by USAID (Contract # AID/DSAN-C 0200) to determine the feasibility of organizing an international appropriate technology network.

During the course of this study, VITA has contacted over 400 individuals and organizations involved in AT, who subsequently have expressed their opinions and specific requirements for the development of an AT network. Some of the reactions to a network approach were negative, the approach described as one more unnecessary structure to impede progress. Most reactions, however, were positive, expressing the desire to reach a common mode of communication for all those involved in the development process.

The results of this study reflect the multiplicity of views expressed both in on-site interviews and mail surveys. Respondents included organizations functionally described as: (1) Transfer Agents, (2) End-Users, (3) Facilitators, (4) Research and Development Institutes, and (5) Sponsors. These categories are defined further in the methodology section. Survey results reflecting their opinions are the basis of this report.

SECTION 2: MODEL FOR APPROPRIATE TECHNOLOGY DEVELOPMENT

MODEL FOR APPROPRIATE TECHNOLOGY DEVELOPMENT

In order to provide a conceptual framework for all subsequent analysis and recommendations for this study, VITA has created a simple model for Appropriate Technology Development. The model describes the process involved in developing AT from the recognition of need to the acceptance and implementation stage. (See Figure 1, p.10.) The model explains the functions which organizations and individuals play in meeting the needs of the poor majority. There are many levels at which the stages within the model interact; this representation only shows a simple flow. The model is designed to focus on service to the end-user or requestor. In this sense, the end-user can be any individual, group, or organization whose basic human needs would be maximized by the application of AT.

There are five stages in this AT Development model: (1) recognition of need, (2) technology transfer, (3) adaptation, (4) diffusion, and (5) acceptance and implementation.

RECOGNITION OF NEED

The first step in the AT process occurs when the individuals or communities become aware that : (1) a problem exists; and (2) the problem warrants the time, effort, and expense involved in solving it. This first step is the most critical, for without the individual's or community's recognition of its needs, any change in the pattern of life proposed to meet this need will face tremendous obstacles to acceptance.

Recognition of need also implies that the individuals or communities involved have the willingness to try to meet the need; in essence, that the technology would have a positive cost/benefit ratio. Such willingness can occur only if those with the need believe that a solution is both possible and desirable. In other words, the cost of living with the need (e.g. hunger, illness, poverty, ignorance, etc.) must be greater than the cost of implementing a solution (e.g. financial outlays, hard work, change in customs, etc.)

There are two ways in which recognition of need can occur: (1) the individuals or communities define a problem on their own; and (2) outside assistance in the form of a needs assessment helps them to recognize and understand their needs. If an assessment is used to identify a specific need, it must be conducted in a manner that is sensitive to the culture and traditions of the community. Furthermore, the solutions proposed on the basis of the assessment must also be in harmony with the beliefs of the community, and be accepted by the community.

Between the request for assistance and the preparation of a response, other steps may be necessary, including clarification of the request and the assembly of outside resources, to completely respond to the request. The response, once formulated, begins a process which can be defined in four general stages.

TRANSFER

Technology transfer is the movement of technical information, equipment, prototypes, plans, blueprints, how-to-do-it manuals, etc., from a place where the technology is recognized to a place where it can solve an identified

problem. Technological transfer can be accomplished through publications, information systems, AT training programs, pilot projects set up to test designs in local situations, or by providing consultants for on-site help. In general, technology transfer is either accomplished by: (1) utilizing media, especially print media; (2) on-site and in-person advice, including consultant's explanations provided directly to end-users, and (3) demonstration of the technology involving end-user participation.

ADAPTATION

Any application of AT, however successful in one particular situation, must be adapted to local conditions. The AT application must be: (1) in harmony with the physical environment, (2) compatible with the technological environment, including the skill levels and experiences of the end-users, and (3) appropriate in particular local economic terms within a specific socio-cultural setting. The process of adapting a design, plan or prototype may require modifications based on feedback from persons involved in the adaptation process. Adaptation is essentially a research and development stage, which may involve a strong component of training potential manufacturers, demonstrators, extension agents and end-users. The adaptation process must be documented to provide feedback for further design modifications and adaptation processes in the future.

The adaptation process is typically characterized by intense, short-term needs for: (1) highly skilled personnel, to carry out the construction modification, testing, training, etc.; and (2) funds to purchase materials, rent equipment, etc. The personnel needs are usually for consultants whose expertise may be required for only a few weeks to a few months to answer a specific technical question.

DIFFUSION

Diffusion requires on-site work in the communities and small businesses where the technologies are designed to assist. This stage implies a set of subprocesses which can lead to the widespread acceptance and use of the technologies. Priorities among these processes differ in each case, but among the more important are: (1) training, (2) production, (3) maintenance, (4) marketing and promotion, (5) legal approvals, (6) financing, and (7) identification of channels to reach end-users. The training of intermediaries, such as rural extension workers, to diffuse the technologies, as well as the training of end-users, is part of this stage. Important components of this stage are: (1) the establishment of production systems which are appropriate to the level of demand for the technology, (2) the support of the producers and supply of the necessary raw materials, (3) the creation of a price structure and necessary credit policy which will assure end-users access to the technology, (4) the consideration of transportation and other logistical problems in the delivery and pricing of the technology, and (5) the establishment of systems for maintenance of the technologies.

ACCEPTANCE AND IMPLEMENTATION

The goal of the AT development model is to increase widespread acceptance and use of the new technologies by a maximum number of end-users. However, initial acceptance and use is most often limited to a minority of the potential users. Therefore, to insure maximum utility of the technology, additional efforts in the transfer, adaptation, or diffusion stages may be required to increase acceptance.

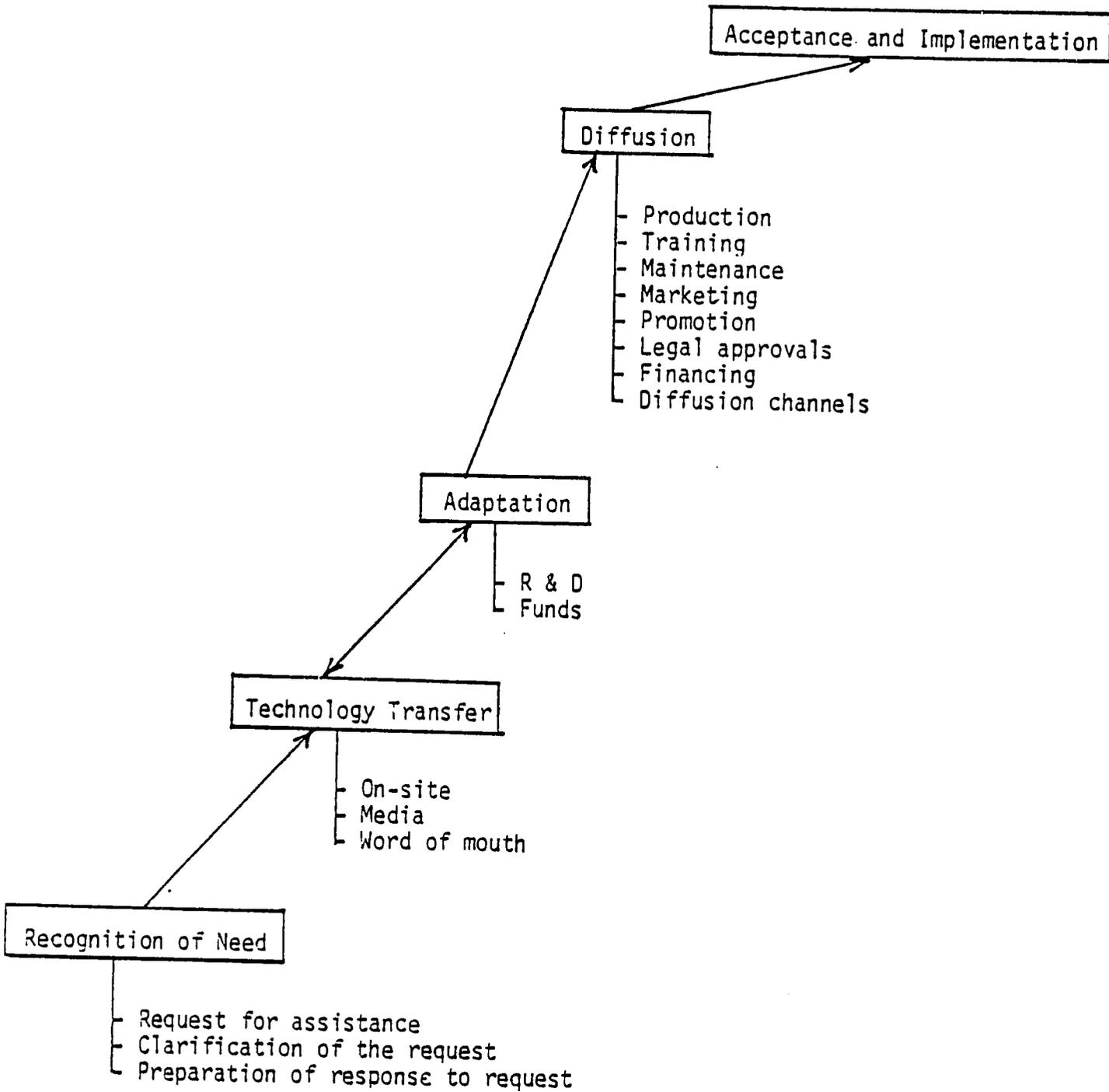


Figure 1: Model for Appropriate Technology Development

SECTION 3: METHODOLOGY

METHODOLOGY

For this study, a variety of mechanisms were employed to identify and survey the broadest possible spectrum of development agencies, AT practitioners, and end-users. Two hundred and three (203) groups and individuals were surveyed through on-site interviews. One thousand three hundred and fifty-three (1,353) groups and individuals were contacted by mail; 215 (15.9%) responded. One hundred thirty (130) selected data base organizations were contacted by mail; 47 (36.2%) of these have responded to date. All data were collected, coded, and computerized for easy access and comprehensive analysis.

SURVEY INSTRUMENTS

Based on its previous experience in conducting both on-site and mail surveys, VITA prepared a four-part, 37-question survey instrument for on-site interviews. The instrument was designed to enable interviewers to obtain key data on the following items: (1) the resources currently being devoted to AT, (2) the constraints which hinder AT development and dissemination, (3) the additional resources that are seen as necessary to overcome these constraints, and (4) the best means perceived to deliver these needed resources. In addition, a supplemental two-part, 20-question survey instrument was developed to address the needs and resources of larger technical information/documentation centers that were surveyed on-site.

A shortened version of the basic instrument was prepared for use in the mail survey. Fewer questions were asked in order to maximize response. Questions that were selected for the mail survey were identical to their counterparts in the on-site interviews.

Finally, given the unique nature of the technical data base organizations, it was decided to use a brief, more specialized instrument in surveying this target group.

Copies of the survey instruments are included in Appendix 4.

IDENTIFICATION OF GROUPS AND INDIVIDUALS

An initial list of approximately 1,350 development agencies, AT practitioners, end-users, and technology-oriented data base organizations was compiled from information contained in VITA's Organization and Country files. This listing was extensively reviewed and 253 groups and individuals were selected to be surveyed on-site. These groups were selected according to the following criteria: (1) prominence in national or international AT activities, (2) level of activity in AT development, or (3) functional category in the AT development process. The remaining 1,100 were targeted for surveying by mail.

ON-SITE INTERVIEWS

In October, 1979, the organizations and individuals scheduled for on-site interviews were sent an introductory letter, which outlined the purpose and timing of the upcoming survey. VITA assembled a team consisting of seven staff members and one consultant. All team members were given a one-week training program on the goals of the survey and interviewing techniques. Included in this training was a briefing from the USAID Project Officer concerning USAID's objectives for the survey. Team members then visited forty-five countries. The field portion of this survey began November 1st and ended December 21, 1979.

Of the 253 scheduled interviews, forty-three had to be cancelled due to the inability to obtain clearances for team members to enter certain countries. Additionally, seventeen interviews could not be held due to insurmountable

transportation problems encountered en route (cancelled flights, vehicle breakdowns, etc.) Therefore, 193 of the original list of 253 interviews were completed.

During the course of conducting on-site interviews, members of the survey team identified 320 additional organization and individuals active in various aspects of AT development. Of these, ten were surveyed through on-site interviews. The remaining 310 were contacted by mail. Thus, the total of on-site interviews was 203.

Surveyors visited the following forty-five countries during the course of the field portion of this study:

LESS DEVELOPED COUNTRIES

- Asia

- Fiji
- India
- Indonesia
- Korea
- Malaysia
- Nepal
- Pakistan
- Philippines
- Singapore
- Sri Lanka
- Thailand

- Africa

- Botswana
- Cameroun
- Ivory Coast
- Kenya
- Liberia
- Mali
- Nigeria
- Senegal
- Tanzania
- Togo
- Upper Volta

- Latin America and Caribbean

Argentina
Barbados
Brazil
Costa Rica
Dominican Republic
Ecuador
Guatemala
Jamaica
Honduras
Peru
Trinidad & Tobago
Uruguay
Venezuela

- Near East*

Jordan
Tunisia

MORE DEVELOPED COUNTRIES

- Europe, North America, and Japan

Austria
France
Germany
Japan
Netherlands
Switzerland
United Kingdom
United States

* - Near East data are limited due to insurmountable difficulties in obtaining the necessary clearances to enter several countries

MAIL SURVEY

Those organizations and individuals that were not visited were sent mail surveys. The initial mailing of approximately, 1,100 mail surveys took place in the last half of November, 1979. A packet was sent, which included: (1) a cover letter introducing the project, (2) an executive summary of the project, (3) the mail survey, and (4) a set of definitions relevant to the completion of the survey instrument.

Mail survey activity continued in January, when surveyors returned with 310 referrals from groups surveyed on-site. On February 4, 1980, the mail survey was deemed completed. All totaled, 1,409 packets had been mailed; fifty-six were returned for incorrect or no forwarding address. Two hundred fifteen (215) mail surveys were returned; the return rate was 15.9%.

DATA BASE ORGANIZATION SURVEY

VITA identified 175 data base organizations in the course of this study. A data base organization was defined as an organization with the following characteristics: (1) a bibliographic and/or abstract collection exceeding 1,500 citations, (2) unrestricted public access, and (3) information focusing on science or technology. In order to ascertain the extent to which each of these data base organizations contained information on appropriate technology or related topics, these organizations were surveyed. A survey instrument with twenty items was used in field interviews carried out with forty-five data base organizations. Finally, 130 organizations with data bases were contacted by mail on January 5, 1980. As of February 7, 1980, forty-seven had responded.

COMPUTERIZATION OF SURVEY RESULTS

In order to discover patterns and provide precision to the evaluation of respondent needs, attitudes, and recommendations, all quantifiable findings were coded and put into a computerized file. This process was completed on all data collected as of February 7, 1980. Computer runs displaying various configurations of the data were generated on February 8, 1980 using programming from the Statistical Program for the Social Sciences (SPSS)

ORGANIZATION FUNCTION CATEGORIES

All organizations and individuals surveyed were classified according to categories based upon their function in the process of AT development. These categories were:

- **Transfer Agent**
refers to organizations that have as one of their major purposes the receiving, refining, and dissemination of information. A Transfer Agent is usually characterized by a documentation center, inquiry response, and/or outreach/extension capability.
- **End-User**
refers to those persons or organizations that are actually involved in using the technologies to improve their or their communities' conditions. This group includes both the farmers and small manufacturers who would be using the appropriate technology.
- **Facilitator**
refers to those small or large organizations that act as catalysts in development activities. These organizations might provide small scale funding, advisory staff to projects, training, or sponsorship of a limited research and development program.
- **Research and Development Institute**
refers to those institutes, universities, research organizations, advanced technical schools, etc., engaged as their primary purpose in research and development efforts. Their work is either directed internally or among members of the international scientific and technical community.
- **Sponsor**
refers to those organizations whose major purpose is to provide program funding.

Using these categories, and allowing for organizations and individuals to perform more than one function, survey respondents characterized themselves in the following manner: (1) 57% performed Transfer Agent functions; (2) 28% performed End-User functions, (3) 61% performed Facilitator functions, (4) 35% performed Research and Development functions, and (5) 14% performed Sponsor functions.

INTERPRETATION CONSTRAINTS

There are four constraints on the interpretation of the survey results.

- The survey instrument focused on resources needed to develop AT. As such, in some cases, it raised previously unknown concepts and did not always reflect all of the organizational activities or any changes which were occurring or have occurred since the survey.
- Mail and on-site survey data were combined where possible. The on-site survey included interviewer interpretation, whereas the mail instrument was completed by the respondent without interpretation. Nonetheless, to have an adequate sample size, and given the general nature of the questions asked, the two survey results were combined.
- The mail survey necessarily required those who participated to be literate. Illiterate persons' responses are found, though in limited numbers, in the on-site interview material.
- A limited number of groups in each country responded to this survey. Thus, an understanding about the situation in each country was based on the information that was provided by those organizations and individuals who responded to the survey, and previous VITA interaction with groups in that country.

SECTION 4: USE OF RESOURCES:

SURVEY RESULTS OF PRESENT AND FUTURE NEEDS

USE OF RESOURCES:
SURVEY RESULTS OF PRESENT AND FUTURE NEEDS

Organizations and individuals seek to utilize their resources to solve problems during all stages of AT development. The following section describes: (1) types of resources presently utilized, (2) problems encountered in acquiring these resources, and (3) additional resources needed by people and organizations working with appropriate technologies.

IN-HOUSE RESOURCES

As organizations and individuals prepare responses to problems, resources can be acquired from both in-house and external sources. External sources refer to any source not existing within a particular organization.

Regional Totals

For all kinds of organizations, the four types of in-house resources most frequently available are: (1) technical expertise, (2) publications, (3) reports from other organizations, and (4) technical documents. This pattern is apparent for all functional categories of participants. (See Table 1, p. 125).

Results by Region

• Asia

Four most frequently reported in-house resources, for all categories of organizations except Sponsor are: (1) technical expertise, (2) publications, (3) reports from other organizations, and (4) technical documents. No patterns were evident in the data gathered on the in-house resources of Sponsors due to the even distribution of responses.

- Africa

Three primary in-house resources, for all categories of AT participants, available are: (1) technical expertise, (2) publications, and (3) reports from other organizations. The fourth in-house resource varies dependent upon the functional category. Sponsors indicated that they had information about funding sources as well as demographic/statistical data. End-Users indicated comprehensive and balanced in-house resources including demographic/statistical and geographic information.

- Latin America

Results from End-Users and Facilitators indicated a similarity to the regional totals, as technical expertise, publications, and reports from other organizations are the most frequently reported in-house resources. Transfer Agents indicated strengths in their in-house resources which included technical documents and demographic/statistical data, as well as those resources mentioned; Research and Development Institutes frequently mentioned technical documents as a resource; Sponsors and Facilitators indicated they had information on funding sources.

- Near East

Due to the limited data obtained from organizations and individuals in four of the five functional categories, it is only possible to evaluate the response of Facilitators. In-house resources closely parallel those most frequently mentioned in the regional totals, with the addition of demographic/statistical data.

- Europe, North America, and Japan

In-house resources are similar to those from the regional totals data.

Discussion

Organizations and individuals report most frequently that they have four types of in-house resources: (1) technical expertise, (2) publications, (3) reports from other organizations, and (4) technical documents.

However, these resources are also those most often requested from external sources (see below). Therefore, while they are the most frequently reported resources, they may be inadequate relative to the needs of the organizations. Also, the in-house resources of the organizations and individuals surveyed often are specialized according to the particular function they perform. For example, organizations in the Sponsor category usually have more resources concerned with funding sources than other areas.

EXTERNAL RESOURCES

To respond to a problem, organizations and individuals often supplement their own resources with resources requested and obtained from external sources. The extent to which resources are acquired from external sources indicates networking activities, defined as interinstitutional and/or interpersonal cooperation.

Regional Totals

Overall, survey results concerning resources which are acquired from external sources are very similar to those discussed in relation to in-house resources: (1) technical expertise, (2) publications, (3) technical documents, and (4) reports from other organizations.

A pattern emerges when the data are analyzed by type of organization. Regional totals reveal that Transfer Agents, Facilitators, and Research and Development Institutes are not acquiring publications. In contrast, End-Users and Sponsors are heavily acquiring publications. (See Table 2, p. 128).

Results by Region

- Asia Results from Asia show that resources acquired from external sources are generally similar to the regional totals, and confirm the pattern in which Transfer Agents, Facilitators, and Research and Development Institutes do not acquire publications, while End-Users and Sponsors emphasize publication acquisition.
- Africa Results from African organizations and individuals surveyed reveal that resources acquired from outside sources are similar to the regional totals. The most interesting response is the relative emphasis on publication acquisition by Transfer Agents, suggesting that the internal collections of African Transfer Agents are too small to respond to an inquiry from only their in-house resources.

- Latin America
Latin American survey results indicated similarities to the total regional data. Transfer Agents do not place emphasis on publication acquisition; End-User and Sponsors stress such acquisitions more than other resources from external sources.
- Near East
Partial results indicated that Facilitators acquire all types of resources from external sources.
- Europe, North America, and Japan
The same pattern of End-User and Sponsor emphasis on publication acquisition is evident.

Discussion

The survey results reveal that all categories of organizations are acquiring the following resources from external sources: (1) technical expertise, (2) publications, (3) technical documents, and (4) reports from other organizations. Two indications concerning the use of resources from external sources are: (1) organizations and individuals know where and how to acquire these resources, and (2) in-house resources are generally insufficient to completely respond to a request for assistance.

SOURCES OF EXTERNAL RESOURCES

The source of these external resources will provide a preliminary view of how organizations and individuals are presently sharing resources.

Regional Totals

Survey results from all regions indicated that organizations and individuals acquire resources largely from organizations which operate at the national level, such as ministries or national libraries, and organizations which operate on an international level, such as international development agencies.

(See Table 3, p. 131).

Results by Region

- Asia
Organizations and individuals indicated that national organizations were the most frequently used source of external resources' acquisition. Organizations with the same function as the requestor were the second most used source, organizations operating at the international level, third.
- Africa
African organizations and individuals indicated that the most frequently used external source is organizations that operate at the international level. National and regional organizations also were used frequently to acquire external resources.
- Latin America
The types of organizations from which external resources are acquired are those which operate on a national or global basis, paralleling the regional totals results.
- Near East
Partial results indicated that organizations and individuals often acquire resources from national and global organizations.
- Europe, North America, and Japan
Organizations and individuals in the developed countries tend to rely more on local sources for external resources, perhaps reflecting the fact that many resource agencies are located in the developed countries. Also, European organizations seem to turn to organizations with the same function frequently.

Discussion

Organizations and individuals often obtain resources from those organizations which operate on a national and international level. This is probably due to the abundance of resources at these levels, and to the previously established contacts of these organizations with requestors. Regional organizations, many of which are relatively new, are less significant sources, although they are now establishing the contacts necessary for future expansion of their role.

PROBLEMS

As organizations and individuals attempt to acquire resources from external sources, significant problems are encountered. Seventy-three percent (73%) of all organizations and individuals surveyed indicated they were having some kind of problem in acquiring these resources.

Regional Totals

Overall, the five most frequently encountered problems are: (1) infrequent contact, (2) information taking too long to receive, (3) difficulty in identifying who has what resource, (4) cost for the information is too high, and (5) information is untested. (See Table 4, p. 133).

Results by Region

- Asia
The results obtained from Asia are similar to the regional totals except that data from Research and Development Institutes indicated that they were also having problems in obtaining information due its proprietary nature.
- Africa
African results are comparable to the regional totals. Research and Development Institutes indicated that some information received has not been translated into an understandable language.
- Latin America
The results from Latin America are similar to the regional totals, with a significant addition. "Information not being translated" is a frequently mentioned problem; interestingly, no Facilitators mentioned this as a problem.
- Near East
Partial results indicated that organizations and individuals have similar problems as their counterparts elsewhere, including problems with translation.
- Europe, North America, and Japan
Organizations and individuals from the developed countries indicated a different set of problems: (1) difficult to identify who has what resources, (2) information is not accurate, (3) information is not tested, (4) too much information is supplied, and (5) information is not clearly explained.

Discussion

A common set of problems is encountered by Less Developed Countries organizations and individuals that seek to utilize external resources. To address these problems, a system should be established to identify the location of needed resources and to enable and enhance communication and cooperation. The system could utilize coupons to pay for its services, reducing the foreign exchange barrier to information acquisition. Further, delays in information delivery are presently due largely to slow and unsure mail service, particularly between the local requestor and the global organization in a different country. A communications system which connects AT participants should have as a priority the rapid and efficient transfer of essential information.

RESOURCE NEEDS AND WANTS

Organizations and individuals were asked specifically what types of additional resources would assist them in meeting their goals and objectives. The following section describes both significant responses and omissions.

Regional Totals

Three types of resources were most frequently mentioned as desired for further AT development activities: (1) information, in the form of publications, technical documents, and reports from other organizations, (2) expertise, and (3) funding. A resource not frequently identified was marketing assistance. Anecdotal information suggests that AT organizations are focused on the adaptation of AT and not its diffusion. (See Table 5, p.136).

Results by Region

- Asia
The results from Asia were similar to the regional totals, including the infrequently expressed interest in marketing.
- Africa
The African results were comparable to the total regional results. Interest in marketing was only infrequently expressed.
- Latin America
Results from Latin America resembled those of the regional totals. A major exception, however, was the frequency of interest in marketing assistance.
- Near East
Partial results from the Near East suggest that there is a high degree of compatibility with regional total results.
- Europe, North America, and Japan
The results from the developed countries are very similar to those expressed in the regional totals.

Discussion

The similarity between regions regarding desired resources is striking. Resource needs and wants are similar to the resources obtained from external sources, with the addition of funding. The challenge for the international AT community is to identify those organizations and individuals who have the ability and willingness to assist appropriate technology project development.

FORMAT FOR DESIRED RESOURCES

Organizations and individuals were asked to identify the format in which to receive these desired resources. This question is particularly important as it focuses on the relationship of End-Users with organizations in other functional categories.

Regional Totals

Regional totals indicated that End-Users preferred a variety of AT delivery mechanisms. On-site instruction was slightly favored. In addition, simple manuals and correspondence were frequently mentioned by End-Users as desired ways to acquire information and other resources. (See Table 6, p. 139).

Results by Region

- Asia
Results from Asian End-Users most frequently indicated a preference for on-site instruction and simple manuals.
- Africa
Results from African End-Users exhibited a preference for on-site instruction and correspondence.
- Latin America
End-Users from Latin America frequently indicated a preference for on-site instruction and simple manuals.
- Near East
No data available
- Europe, North America, and Japan
Survey results indicated End-Users prefer on-site instruction and correspondence

Discussion

The most frequently desired format mentioned by End-Users for resource sharing was on-site instruction. This might be due to the End-Users' limited ability to absorb printed materials. Any strategy for AT development must take into account this desired format, and thus should contain a strong field component.

THE VIEW FROM THE BOTTOM: END USERS ONLY

The results described previously derive from responses given by all organizations and individuals according to region. An organization or individual often performs more than one function in the stages of AT development. For example, a Peace Corps office could describe itself as a Transfer Agent, End-User, and Facilitator (as one did), or a national development agency could describe itself as a Transfer Agent, End-User and Sponsor. In order to focus more precisely on the needs and wants of the poor majority, a special computer run was generated on those organizations and individuals who only identified themselves as End-Users. This group includes mechanics, farmers, rural artisan centers, pottery makers, etc. VITA feels this group, although numerically small, is most representative of End-User wants and needs. (See Table 7, p. 141).

In-House Resources

Results from End-Users indicated that their most frequently reported in-house resource was their own technical expertise. Publications and reports from other organizations were less frequently mentioned. In general, in-house resources are scarce.

External Resources

Results indicate that information is the most frequently acquired resource, followed by technical assistance. Other types of resources are acquired less frequently.

Sources for External Resources

Results demonstrate reliance on either local and national organizations, or organizations and individuals working in the same field. Regional and

global organizations are less frequently called upon for assistance.

Problems

As could be expected, End-Users with limited resources are often isolated; their problems in acquiring external resources reflect their isolation. The predominant problems are infrequent contact and difficulty in identifying the location of resources.

Resource Needs and Wants

End Users are most interested in ending their isolation; the most frequently expressed resource need is knowledge of the experience of other projects. End-Users also frequently expressed a desire for technical experts, to provide advice and training. Information, in the form of publications, is the next most frequently expressed need.

Format for Receiving Resources

End Users most frequently expressed a desire for on-site instruction, followed by simple manuals.

SECTION 5: PROGRAM OPTIONS

PROGRAM OPTIONS

Several program options are available to USAID (see Figure 2, p. 33) to direct its assistance towards improved resource sharing directed at AT diffusion among the rural poor in developing countries. Using the more than 1500 organizations and individuals identified by VITA in the AT network survey as the current AT target population (with a potential of millions of rural poor as ultimate end-users), two alternative action approaches emerge: (1) independent organizational strengthening, and (2) resource sharing/cooperation. Within the "cooperation" option are the further considerations of coordination versus non-coordination.

INDEPENDENT ORGANIZATIONAL STRENGTHENING

For the purpose of this study, independent organizational strengthening is defined as organizations and individuals working independently toward a common goal of adequate diffusion of appropriate technology. In this context, the Agency would seek to provide assistance to all 1500+ organizations on a unilateral basis, working through the missions and AID/Washington to identify and respond to specific needs. The necessarily random process of needs identification and the subsequent response plus the administrative tasks of awarding and monitoring hundreds, perhaps thousands, of small grants and contracts, militates against the effectiveness of this approach.

RESOURCE SHARING/COOPERATION

"Cooperation" is defined as two or more organizations and/or individuals sharing resources to respond to specific requests for appropriate technology transfer and diffusion. This kind of cooperation currently takes place with varying degrees of success and failure as identified in this report (p. 23).

Survey data showing significant organizational cooperation indicates that such cooperation represents the status quo, i.e., the present way that organizations and individuals supplement their resources. While diverse types of cooperation at various levels within the AT community is indeed the norm, there are two alternatives that will facilitate increased cooperation; they are coordinated or non-coordinated cooperation.

Non-coordination

Non-coordination is defined as a plan which uses a product or project-oriented approach to facilitate cooperation among AT organizations and individuals. In this option, specific groups of facilitators and informal networks interact on an ad hoc service basis. For example, the Agency would seek to encourage and accelerate cooperation among the 1500+ AT organizations and individuals by such activities as: (1) the publication and distribution of a regularly updated and expanded international AT directory of appropriate technology resources, and (2) the publication and distribution of an international AT newsletter to supplement the directory which would summarize current AT projects of possible global interest. Essentially, this approach would make publications a linking mechanism between groups. Through the dissemination of universally available information, it brings a minimal amount of coordination to a program of ad hoc service to cooperating groups and individuals.

Coordination

Coordination is defined as a plan for voluntary, but formalized, participation of organizations and individuals in an international effort to share resources. Such coordination would be structured with organizations and

individuals assuming publicly agreed upon roles. This is in contrast to the non-coordinated approach where resources are acquired from a variety of non-formally linked sources. Those organizations and individuals without such non-formal sources in the non-coordinated approach, lack access to necessary resources.

A flexible network designed according to the recommendations of the respondents to the VITA survey would: (1) support local and national networks where they exist, (2) seek to establish local and national networks where they do not now exist, and (3) link these networks into regional and international AT networks. Various options for establishing an international network have been developed by VITA on the basis of its survey results. They all include the publication and service features described in the non-coordination section along with a practical mechanism for linking organizations and individuals through a series of national and regional focal points and a central service unit. Entry into the network will be accomplished through: (1) identification of target groups and individuals by an organization selected by the funding agency, and (2) request from interested participants. In the models developed later, ample opportunity for mixed levels of participation, based on needs and capabilities, will be an essential ingredient. Models, criteria for model selection, and action plans are presented in detail in the last chapter.

This approach offers the Agency a program with clearly defined objectives based on VITA survey research. Maximum opportunity exists to direct assistance to grass roots end-users, who are part of the poor majority, through the

coordinated efforts of the international AT community. The approach also establishes oriented funding mechanism and a viable channel through which to monitor and evaluate progress.

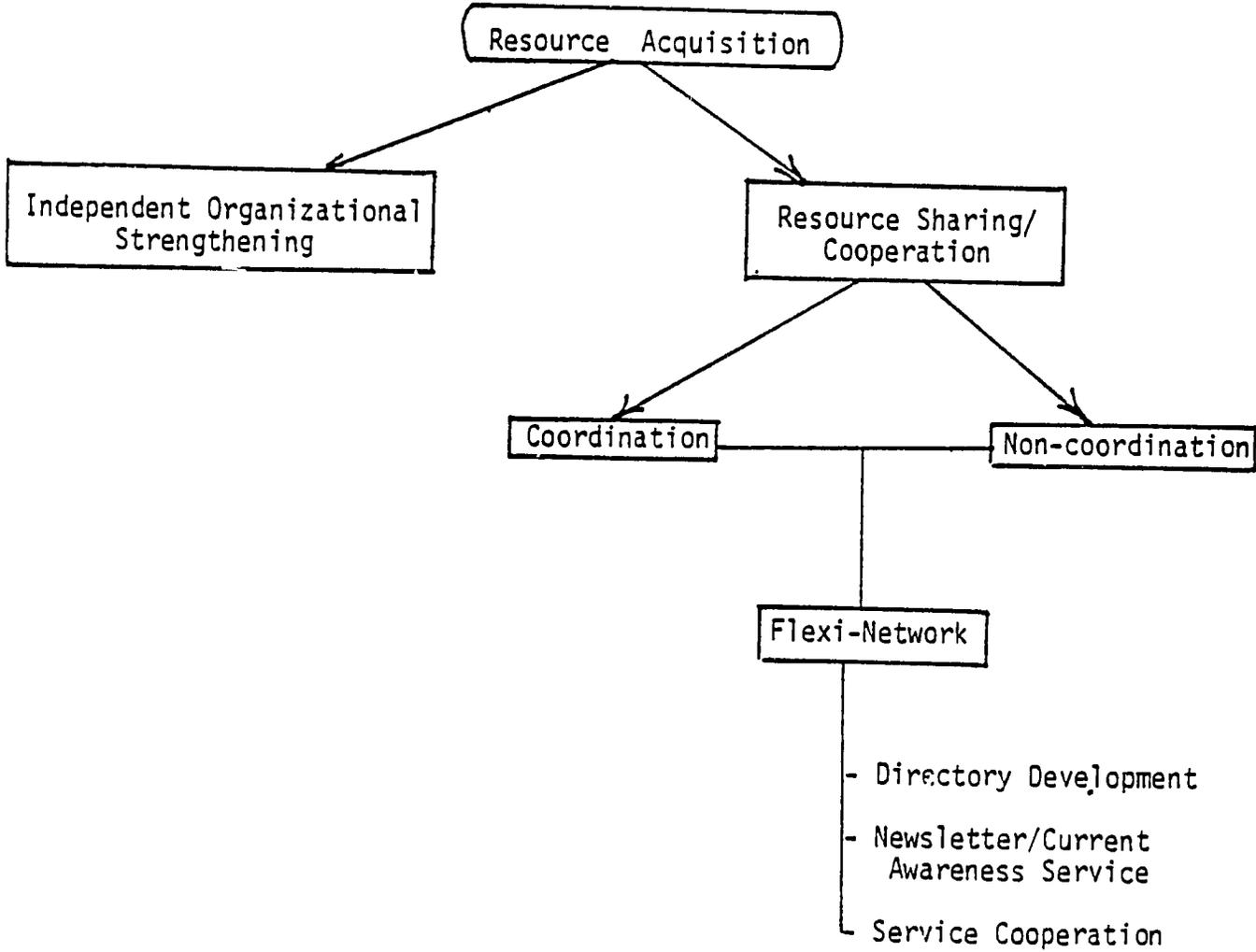


Figure 2 Program Options

SECTION 6: PROPOSED NETWORK ROLE IN AT DEVELOPMENT:
SURVEY RESULTS OF REACTION TO THE NETWORK CONCEPT

PROPOSED NETWORK ROLE IN AT DEVELOPMENT
SURVEY RESULTS OF REACTION TO THE NETWORK CONCEPT

The purpose of an AT network would be to stimulate and facilitate AT development for the poor majority. National networks can assist in AT development during the technology transfer stage by sharing experiences, documentation, consultation with experts, construction of prototypes, etc. The regional and international AT networks can be involved at this stage by establishing procedures for facilitating the exchange of project experiences, documentation, and other information. The network(s) can help individuals who would be available to assist in the later stages in adaptation and diffusion. For example, if a requestor needed to solve an erosion problem, the national AT network might be able to identify already existing and adapted means of controlling erosion. A regional or international network might be able to identify similar experiences in other countries in order to provide a range of possible solutions for consideration by the requestor. Continuing with the erosion example, the national and regional or international networks could identify technicians or consultants with expertise in erosion control, and the requestor could contact these persons for clarification, guidance or on-site assistance.

National, regional, and international networks also would be able to assist in the technology transfer stage by: (1) identifying potential funding sources, or (2) assisting in arranging technical assistance by referring requestors to appropriate organizations and/or individuals. Returning to the example of erosion control, the network(s) could identify potential funding agencies (e.g., research and development institutes, small-scale funding agencies, international agencies working on drought relief) and facilitate the

organization of financial support. Further, the network(s) could identify a set of organizations or individuals (e.g., a manufacturer to make a prototype jab planter, organizations with water control specialists, an anthropologist to evaluate any potential social and cultural impact of increased agricultural productivity) which might provide technical assistance in the transfer of the technology from one area to another.

National, regional and international networks could aid in the adaptation stage of AT development by providing: (1) linkages to and coordination with research and development institutes all over the world to solve particular problems, and (2) short-term consultants to guide and/or direct the project through particularly difficult stages. For example, if the initially prepared response to a request for information and assistance in erosion control does not include consideration of the area's prevailing wind patterns, the network(s) could refer the problem to research and development institutes and/or consultants who have particular experience in wind-borne erosion. These organizational and individual resources would be applied to the problem until the requestor is satisfied that the best possible solution has been found.

Finally, national, regional and international networks could positively contribute to the diffusion of AT by selecting and/or combining the resources necessary to diffuse the particular technology or technique. For example, the network could identify the small business association which might be interested in marketing the jab planter, the development finance corporation which would be interested in financing such a venture, the Peace Corps Volunteers who could assist in the on-site implementation activities, the extension service to develop a plan to inform farmers about this method of erosion control, and a graphics agency to develop the simple books that promote this AT package.

REACTION TO NETWORKING CONCEPT

During the on-site interviews, the concept of networking was discussed with the 203 organizations and individuals. In particular, survey participants were asked if a network of organizations and individuals could cooperate to provide additional resources to organizations and individuals, in order to aid them reach their goals more effectively and efficiently.

ASSESSMENT OF NETWORK IDEA

Survey respondents responded positively to the networking concept. One interesting result was that the closer the organization (as opposed to an individual) was to actual field implementation, the less enthusiastic it was about the networking concept. Anecdotal information indicates that this result reflected a general concern of field groups that the cost of participating in networks could create administrative and reporting burdens which would outweigh the benefit of increased access to resources. On the other hand, the End-Users Only, the actual users of the technology, indicated an overwhelmingly favorable response.

Regional Totals

Seventy-six percent (76%) of all survey respondents indicated that they thought the network idea was "good" or "excellent". Sixty-nine percent (69%) of the End-Users, and 66% of the Facilitators indicated this positive response. The most enthusiastic response came from Transfer Agents, with 86% responding positively. (See Table 8, p. 144).

Results by Region

- Asia
Organizations and individuals in Asia responded very positively to the networking concept. Ninety-two percent (92%) of all respondents indicated that the networking concept was "good" or "excellent". Of particular interest is the fact that all End-Users indicated this positive assessment.
- Africa
Organizations and individuals in Africa responded positively to the networking concept, but with slightly more skepticism than their Asian counterparts. Sixty percent (60%) of all organizations and individuals responded that the networking idea was "good" or "excellent". Forty-four (44%) of the End-Users, 61% of the facilitators, and 71% of the Research and Development Institutes indicated this positive assessment.
- Latin America
Organizations and individuals in Latin America indicated strong support for the networking concept as 90% stated that the idea was "good" or "excellent". Eighty percent (80%) of the Facilitators, 90% of the End-Users, and 92% of the Transfer Agents reacted positively.
- Near East
Reaction to the networking concept was more skeptical in this region. Only 38% of those surveyed indicated that the networking concept was "good" or "excellent". Due to the limited number of respondents, it is not possible to determine if this reaction is universal. However, as trend data, these results suggest an attitude of skepticism towards the networking concept.
- Europe, North America, and Japan
Sixty-five percent (65%) of those surveyed indicated that the concept was "good" or "excellent". End-Users all responded positively; greatest skepticism was expressed by Facilitators.

Discussion

The concept of networking was received quite favorably, but some survey participants expressed reservations. This skepticism was generated by previous unsuccessful efforts at formal networking. Comments from respondents ranged from: "This is a good idea, but I feel it will not go too far." to "this is the tenth form I've filled in like this.. It is up to you to make something come of it." to "This is an act of God."

INTEREST IN PARTICIPATION

Even though some regions responded somewhat skeptically to the networking concept, virtually all of those surveyed wanted to be included in further discussions, if not actually participate in the network itself.

Regional Totals

Ninety-six percent (96%) of organizations and individuals surveyed on-site indicated a continuing interest in the network's development, as defined as responding "very interested in participating" or somewhat interested/want more details". (See Table 9, p. 140).

Results by Region

- Asia
Asian results were similar to the regional totals; 95% of the organizations and individuals surveyed expressed continuing interest. Strongest interest was evident among Transfer Agents.
- Africa
In contrast to a relatively skeptical reaction to the networking concept, 100% of those surveyed indicated continuing interest in the network's development. Strongest indications of interest came from Transfer Agents and Facilitators, the weakest degree of interest was expressed by End-Users.
- Latin America
Organizations and individuals in Latin America indicated a continuing interest in the network's development. Strong expressions of support were elicited from all types of respondents.
- Near East
The Near East region expressed the greatest degree of skepticism. The region's partial results show that the greatest lack of interest in participation was expressed in this region.
- Europe, North America, and Japan
Organizations and individuals from the developed countries expressed continuing interest in network participation. Strongest interest was shown by Transfer Agents and Facilitators.

Discussion

The idea of further participation in this network's development was received very positively by most organizations and individuals. While only 76% thought the networking concept was "good" or "excellent", 96% were "very" or "somewhat" interested in participation. Viewed individually or in combination, these results indicate a high level of interest in establishing some form of AT development network.

SERVICES OFFERED TO THE NETWORK

Respondents to both on-site and mail surveys were asked to identify the types of services which they could offer the network, in return for the network's services. Proposed services included both in-kind and actual cash outlays.

Regional Totals

In-kind services were the most frequently reported result. These services included: (1) description of present activities, and (2) loan of publications to other organizations. Second level in-kind services offered were the personnel to train the staff of other organizations. This pattern was consistent for all types of organizations. (See Table 10, p. 148).

Results by Region

- Asia
The results from Asia closely resemble the regional totals, except that both Facilitators and End-Users offered personnel for performing tasks related to interaction with the network. Facilitators did not offer "description of their services".
- Africa
The results from Africa resembled the regional totals and the results from Asia. Description of services and publications were the items most frequently offered. In addition, African respondents offered staff to perform network tasks.

- Latin America
Latin American results indicated that services to be offered the network closely parallel the regional totals. Most frequently reported services were: (1) description of services, (2) publications, (3) personnel to train other organizations, and (4) the actual training.
- Near East
Partial results from the Near East are inconclusive, but seem to parallel the regional totals.
- Europe, North America, and Japan
The results from the developed countries are similar to the regional totals. Additionally, there was an offer of staff to maintain the system. Organizations and individuals in Europe also offered to make available information about funding sources.

Discussion

The offering of in-kind services by most survey respondents represents (1) the limited finances on which most AT groups operate, and (2) a skepticism regarding the networks's value; therefore, truly valuable resources, i.e. money, are not offered.

CONDITIONS UPON PARTICIPATION

All participants in the survey were asked to identify the conditions under which they would participate in the network. These conditions focused on the question of access, cost, and interface conditions.

Regional Totals

The three most frequently mentioned conditions were: (1) access to the network's information must be open to all, (2) service must be reasonably priced or free, and (3) there must be minimum bother. This pattern was consistent for all types of organizations and individuals. (See Table 11, p. 151).

Results by Region

- Asia
The Asian results matched the regional total results regarding conditions upon participation.
- Africa
The African results are similar to the regional totals except that many African survey respondents indicated they would attach "no conditions" upon their participation. Interestingly, African respondents did not indicate the necessity for minimum bother, and End-Users indicated they must be reimbursed for what they put into the system. A number of African respondents stressed that South Africa be excluded from participation in the network.
- Latin America
The results from Latin America matched the regional totals in relation to conditions upon participation.
- Near East
While only partial, the initial results suggest that organizations and individuals in the Near East region would attach no conditions on their participation in the network.
- Europe, North America, and Japan
While the general results regarding conditions matches the regional totals, an interesting difference is the desire to be reimbursed for entries into the network.

Discussion

Those members of the international AT community expressed a desire for minimal conditions on participation in an international network. Participants in the survey recognized that such a network would need to be financially self-supporting. Therefore, respondents indicated that network services should be priced, although relative to the capacity of the organizations to pay for them.

The condition of minimum bother represents a desire for minimum paperwork. AT organizations already are stretched and cannot take on additional administrative activities. The network must be very sensitive to this condition. Information on AT development must be compiled, but too much contact will alienate network members. Similarly, access to the information must be simple and straightforward.

SUMMARY

The results from the on-site and mail surveys indicate positive reaction to the networking concept and a desire to participate in further discussions on the nature of its implementation. Survey respondents, perhaps reflecting the fact that they operate with limited funds, indicated a preference for in-kind services as a means to acquire desired resources. Three conditions emerged as fundamental conditions for developing the network: (1) access being open to all, (2) the service being reasonably priced or free, and (3) minimum bother. The most enthusiastic response came from respondents that were only End-Users, the group closest to the poor majority (see below). Seventy-five percent (75%) of this group indicated the network concept was excellent, and 100% were "very interested" in participating in the network.

THE VIEW FROM THE BOTTOM: END-USERS ONLY

The groups which described themselves as filling the function of End-User only were considered as most representative of the needs and wants of the poor majority. This groups includes the farmer, mechanic, rural artisan center, pottery maker, etc. (See Table 12, p. 154).

Opinion of the Network Concept

End-Users were all in favor of the networking concept. Seventy-five percent (75%) indicated it was an "excellent" idea.

Interest in Participation

All End-Users were "very interested" in participating in the development of the network.

Services Offered

End-Users listed the following in-kind services: (1) description of their services, (2) information on funding sources, and (3) training of other AT practitioners. These services were offered in return for access to network data and services.

Conditions upon Participation

The End-User response was emphatic that access to network resources must be open to all groups and the service must be reasonably priced relative to the financial situation of the particular groups. End-Users mentioned two other conditions: (1) they must be reimbursed for their entries into the network data base, and (2) the information must be confidential.

SECTION 7: STRUCTURE AND FUNCTION OF AN
INTERNATIONAL AT NETWORK

STRUCTURE AND FUNCTIONS OF AN
INTERNATIONAL AT NETWORK

The objective of an international AT network is to facilitate the use of appropriate technologies by the poor majority in developing countries. The major goals of the network are to create: (1) increased income, (2) situation improvement, and (3) opportunity expansion. Successful AT development is the result of a combination of many factors including: (1) community participation, (2) information dissemination, (3) research and development, (4) training, (5) funding, and (6) marketing. Many of these elements can best, and only, be assembled at the local level in order to yield a product that is compatible with unique technical, social, cultural, economic, and environmental conditions within the community. A network can aid local development by assisting national and local organizations to secure the critical external resources currently beyond their reach. These resources include: (1) information, most notably description of actual experiences in implementing specific technologies, (2) experts for consulting, especially short-term assignments, and (3) identification of potential sources of financial assistance.

END-USER SERVICE

In recognizing that there are goals and needs identified in the results of this survey, it is important to design a structure that rationally serves the needs of its users. Such a structure can be supported by a "service approach" to AT development. The service approach is responsive to the goals of (1) income generation, (2) situation improvement, and (3) opportunity expansion for the End-User. Its duties are performed by a variety of "service agents" (e.g. organizations, family members, neighbors, village headmen, etc.)

whose major function is to sensitively approach the requested development need.

The service agent must assist in developing a solution that is:

- complementary to existing social and cultural beliefs
- in harmony with the physical environment
- economically sensible to the End-User
- consonant with indigenous materials and maintenance
- perceived to have a greater benefit than cost (positive cost/benefit ratio)

When organizations (such as private voluntary agencies, universities, and governmental agencies) are the service agents in the application of AT, it is important that they consider assistance to the End-User as their primary goal. Organizations that can facilitate service to a requestor or client group should be involved in the development process, and should these organizations require strengthening of internal resources to support services to the requestor, then such support should be initiated. However, the focus of the organization's expanded capability should be on the increased ability to assist its requestors, rather than solely on the accomplishment of internal goals.

Therefore, as a sound foundation for successful interaction, organizations involved in service to requestors should consider the following:

- the needs of the End-User over internal goals
- seeking a solution by involving the fewest possible number of organizations
- helping the End-User articulate his need
- training the End-User in the information seeking process
- sensitivity to local conditions
- seeking basic, simple solutions
- seeking compatibility within solutions

FLEXIBLE NETWORK STRUCTURE

The structure of an international network is in no way monolithic; rather, it consists of many components that take independent actions, linked by a common chain. A common suggestion made by organizations surveyed is the necessity for national networking to coordinate AT developments. In some countries,

network structures already exist; in other countries, little AT activity has begun. A combination of efforts and experiences from local participants can be combined to create a national network. Within each country, the actual roles, structure and responsibilities of a national network must be tailored to match specific conditions. Emerging from this combination of resources would be a structure that would facilitate the sharing of resources based on local conditions and activities.

Similarly, the role of any regional coordinating unit must be tailored to the desires of its constituents. Some countries have indicated a preference for regional sharing of resources; other have indicated a desire to relate directly to an international organization. This structure is flexible. If a group of countries, at the outset of this effort, should decide not to form a regional unit, but after a period of time decides such an effort would be in their interest, the option to regionalize is still available.

Although the specific network needs within each country may differ, a pattern emerged from survey respondents: a need for national networking as well as a coordinating mechanism to increase cooperation.

NATIONAL NETWORKS

Purpose

Survey respondents indicated that development must be based on local conditions, traditions, and cultures. They also indicated a desire to use local institutions to conduct needs assessments and develop the solutions to the recognized needs, these solutions being based on the cultural patterns of the area. The national network would assume two critical roles:

- coordination of needs assessments among local groups and needs recognition among End-Users

organization of support to facilitate solutions that are sensitive to practices of the End-Users

Additionally, the network would assume responsibility for documenting experiences of AT implementation for transfer to other national and local organizations. A focal point for national AT activities should be developed so that community members can become aware of where to initiate the solution seeking process.

Elements Necessary for AT Development

In the course of this survey, on-site surveyors found that many of the elements necessary to diffuse AT were already locally present. However, a major problem appeared to be the lack of coordination amongst these elements. Invariably, appropriate technology solutions were not implemented because of factors including: (1) lack of knowledge about the range of technologies available, (2) lack of details about a specific technology (e.g. materials, output, manpower, etc.), (3) lack of funding, and (4) lack of on-site expertise to guide the project. Often these elements can be found through national sources, but the user is often unaware of who has what resources. By way of example:

A surveyor was driving with officials of a national resource organization who complained that no money was available to support a "genius" who was constructing solar collectors in his backyard. Subsequently, the surveyor met with the head of a development organization who lamented that he had three million dollars to spend and no identifiable projects or recipients for his money.

While it is by no means certain that the organization would have supported the inventor, it is significant that a potential distributor of AT devices was not proceeding with his work while a potential funding source remained untapped.

It would be the role of the national AT network to combine the necessary ingredients to successfully meet the needs of the End-User. In order to support this process, the national network should have the following resources:

- Extension agents/field staffs to monitor and document project needs and experiences
- National skills bank to provide information on low cost, high quality short term consultants
- Documentation center to acquire and disseminate the printed information
- Prototype development center to conceptualize, build and test the technology
- Financial clearinghouse to provide monetary information and direct fiscal support
- Promotion center to inform the population of the appropriate technology
- Involvement of small industries, either commercial or governmental, to utilize the technology and provide for mass diffusion
- Marketing research capabilities to assess further use for the technology
- On-site training to insure that skills and devices are used to the maximum advantage
- Electronic communication (telex and telecopier in most cases) to allow for the rapid transfer of messages and information

The functions listed above are integral parts in support of the AT development model. The network, in order to support AT development activities, must have, or be able to acquire, these resources.

Where these resources are unavailable, they should be developed. For instance, if there is no AT documentation center in the country, but all of the remaining elements are present, the network should work to develop a documentation center. Similarly, if there is no capability to do prototype development in a country, the network should work with other organizations to develop this capability through: (1) its own resources, (2) linkages with other networks' resources, and (3) governmental institutions.

A critical focus of this plan concerns how the listed support elements will be developed, physically located, and formalized into the network. For example, in country X, there are no agencies capable of performing marketing analysis for small-scale industries. The options for the development of this

critical element include:

- training of staff of a network organization to perform this function
- training of staff of other organizations (e.g. consulting firms) to perform this function
- bringing in a short-term consultant to do the specific market analysis

The solution to this hypothetical problem would be developed so that it was consonant with the situation and expectations of the network participants.

Two identified constraints to transnational information dissemination are languages and complexity. These constraints can be minimized by having document translation and simplification capabilities within the national network. The national network would receive (and disseminate to other networks) documents in an international language (probably English, French, and Spanish); then, network participants would simplify and adapt the information dependent on the clientele. This simplification would include developing illustrated books and simple manuals, in the appropriate language or dialect, for use by End-Users.

The most critical element of this organizational effort to service the End-Users is extension/field staff. The field staff helps the End-Users to articulate needs and transmits the request to the network. In doing so, the field staff acts as a liaison between the villagers and the network, helping the villagers to: (1) define the need, (2) collect the information regarding the technology that would meet the need, and (3) select and work with chosen consultants to make certain that the solution is in harmony with the cultural practices of the village. The field staff also helps to define the needs of the villagers within each step of the AT development process: (1) recognition of needs, (2) technology transfer, (3) adaptation, (4) diffusion, and (5) acceptance and implementation. The extension agent and/or field staff is a crucial link in this network process.

National Network Outputs

The national network will develop specific outputs, in order to service its members and the community at large. The national network will produce directories that are focused on participant resources, and activities, including name of organization, address, in-house resources, field activities, projects, etc. Also, the network would publish a directory of technologies in use at specific locations, allowing for the vital intra-network communication that is necessary for successful AT development.

In order to keep network participants informed as to relevant developments at the national and international level, the network would publish a newsletter/current awareness bulletin, to let network members know of new developments in AT. Included in this newsletter would be reports on interesting regional and international AT inventions and innovations.

The national network would also develop and distribute publications about appropriate technologies. This would include receiving the information, translating it to the appropriate local language, simplifying the text so that it would be understandable, and distributing publications through field staffs, mailings, response to requests, etc.

Finally, the national network would be involved in the development of projects, in order to diffuse AT throughout the target population. This project development, such as the dissemination of job planters (a VITA project in Upper Volta) would have a measurable output, i.e., the diffusion of such AT's into the field. This output would be measured over a longer time period, perhaps as long as three years, but can also be viewed as a system output.

Alternatives for the Development of a National Network

Given that there are many ways to organize and structure a national network, the alternatives that are pursued should be determined by the network participants. Alternatives for organizing such a network include:

- Development of a steering committee to generate a proposal for a national network
- Organizing a conference for potential participants to discuss the idea and develop a mechanism for future activities
- An individual or organization taking the lead and beginning networking activities

Most organizing efforts will include some aspects of all three alternatives. The organizing efforts must appeal to potential network participants and, therefore, should be designed in response to each individual situation. Again, the extension agent can play a crucial role in understanding local needs and communicating these to network initiators.

Once initial discussion of the network concept has been introduced, further alternatives for its structure would be suggested from field experience. Structural alternatives might include:

- Establishing a lead agency or focal point to coordinate national AT activities. This lead agency could be "housed" in a number of places including an existing agency, a new agency, or under a coalition of a number of agencies
- Assigning specific functions, including the function of publicizing who has what resources, to specific organizations.

Summary

The key roles of the national network will be (1) coordination of resource sharing necessary to successfully diffuse AT, (2) meaningful monitoring and support of user projects to facilitate successful results, and (3) the documentation of the AT development process for reference by others in similar situations.

REGIONAL COORDINATING UNITS (RCU)

Purpose

When applicable, AT experiences will be shared in a national network with others involved in similar work. There is great likelihood that information that is culturally and environmentally sensitive in one part of the country will have internal application elsewhere.

However, because of the limited number of AT activities in some countries, there may not be experiences to share. In this case, the national network will want to have access to experiences and consultants that have worked in a comparable environment. For example, relevant experiences might have occurred in neighboring countries where cultural and climatic conditions are similar. The major purpose of the regional organization would be to disseminate the experiences and expertise from national networks within the region to other regional participants needing assistance. In this way, an organization in the Dominican Republic could learn about project activities in Jamaica, which by this hypothesis, might be more relevant than similar activities in Sri Lanka. Other roles of the regional coordinating units would include: (1) Coordination with research and development institutes, to test prototypes for regional application, (2) Development of funding packages to support regional AT activities, (3) Coordination of technical and financial requests to regional organizations and (4) Supplying of documentation, including out-of-region experiences, otherwise not available in national networks.

Resources Necessary for Regional Coordinating Units

The regional coordinating units must have cooperation of the participating national networks and the following resources:

- A documentation center to include: information on participating organization's AT experiences, a catalogue of current updated information on appropriate technologies, and a quality control mechanism to insure best results;
- Electronic communication (telex and telecopier in most cases) to transmit requests and answers between the national networks and the regional coordinating unit;
- Translation capability to transfer information to the requestor in the appropriate language;
- Linkages to other organizations, particularly other regional coordinating units, research and development institutes, and funding sources.

As the regional coordinating unit's major function is to facilitate AT activities by transmitting relevant project information, its mandate must include the active cooperation of the participating organizations in the network. The regional coordinating unit must have comprehensive knowledge of the AT development activities in each country and have such information organized in a manner that offers ease of access and rapid retrieval. In order to accomplish this task, a documentation center is necessary.

The documentation center must have resources and capabilities to acquire, classify and store information for rapid access and dissemination. As regions acquire information to share with their national networks, the regional coordinating unit's documentation center must perform a quality control function to insure that the information transferred is accurate and up-to-date. The regional body should also have a capability to answer technical requests that cannot be answered at the national level.

In order to facilitate the rapid receipt of information requests, each regional coordinating unit and national network should have telex equipment. In addition, to transfer responses rapidly, each participating organization should

have a telecopier to transmit documentation such as abstracts and technical drawings. More detailed information can be sent to requestors via mail. However, for initial response, use of a telecopier offers immediate interaction between participants.

Because some of the information received will be in a language which is incomprehensible to people in other countries in the region, the regional coordinating unit must have a capability to translate information into appropriate language so that the national networks can easily comprehend and disseminate the information.

Not only will the regional coordinating unit transfer project experiences between countries within the region, but also it will offer current information on regional research and development institutes and funding sources. The regional coordinating unit could coordinate requests for assistance from the national networks to the regional research and development institutes (to avoid frustrating duplications) and pass relevant information about these endeavors to the national networks in the form of current awareness bulletins. The regional coordinating unit also could transfer relevant AT applications from other regions of the world to area research and development institutes for testing under local conditions.

The regional coordinating unit may utilize already existing facilities to fulfill some of its functions. For example, if a local translation capability already exists, it would make little sense to duplicate this capability. Rather, relationships with existing services can be handled on a subcontractual basis. However, if services are subcontracted, the regional coordinating unit still would be responsible to the network participants for performance in these areas.

Regional Coordinating Unit Outputs

The regional coordinating unit will develop specific outputs as part of its role of providing service to the national networks. The regional coordinating unit will develop directories, of relevant regional organizations and of the activities and resources of the national networks within the region. Through this type of publication, the national networks would have the option of easily finding the organization or individual who is the owner of or holding the desired resource, whether it be information, expertise, or funding.

The regional coordinating unit would also publish a newsletter/current awareness service, informing recipients of relevant AT developments, including informing groups about organizing efforts in their country. In this manner, the regional unit could facilitate the development of national networks, without a major expenditure of funds.

The regional coordinating unit would develop publications, especially translating these documents into an appropriate international carrying language. For instance, the RCU would translate a document from English into Spanish, and then pass the document along to the national network for further document simplification.

The RCU will also develop specific regional projects, in coordination with regional Research and Development Institutes. These projects would be R & D projects, testing appropriate technologies during the transfer and adaptation stage, with the goal of passing them on to the national networks for minor modifications and eventual diffusion.

Alternatives for the Development of a Regional Coordinating Unit

As with national network development, there are many alternatives involved in the formation and development of a regional entity. The initial question is

whether or not national networks and other agencies wish to cooperate on a regional level. If these constituents do not wish to cooperate regionally, then the development of a regional entity is unnecessary. Where participants express the desire to cooperate regionally, the design of the regional coordinating unit should parallel the process used to formulate the national networks.

Alternatives for organizing such a network include:

- o Development of a steering committee to generate a proposal for regional sharing of resources;
- o Organizing a conference for potential participants to discuss the idea and develop a mechanism for future activities;
- o An individual or organization taking the lead and beginning networking activities.

As with national network development, most organizing efforts will include elements of all three of these methodologies. Again, the organizing method(s) chosen must be in harmony with the needs, expectation and political realities of the groups involved to allow for maximum and continuous participation.

Once discussion has been initiated, a number of options for structuring the regional network could be contemplated by the participants. Such options could include:

- o Establishing a lead agency or focal point to coordinate regional AT activities. This lead agency could be "housed" in a number of places including an existing agency, a new agency, or a coalition of a number of agencies.
- o Assigning specific functions, including the function of publicizing who has what resources, to specific organizations.

Summary

The regional coordinating unit's major function will be information transfer of intraregional project experiences, expertise and potential funding sources to national network participants to insure that AT application and

resources are shared. Similarly, the regional coordinating unit will coordinate AT development information from regional research and development institutes and funding agencies. Finally, the regional coordinating unit will interact with other regional coordinating units through the central service unit to transfer information on an international level.

THE CENTRAL SERVICE UNIT (CSU)

Purpose

There will be cases when a desired application of AT may not have been developed within local or regional settings. One of the purposes of an international network is to transfer technological experience and expertise from one area or region of the world to another. The purpose of a Central Service Unit will be to coordinate international activities, so that the experience and expertise can be transmitted between areas quickly, accurately, and efficiently.

The Central Service Unit will address questions that cannot be answered by resources within regions. For example, if a region does not have experience with a particular agricultural project a requestor wishes to introduce, the regional unit would ask the Central Service Unit to identify or develop information on this topic. The initial activity of the Central Service Unit is to query the other participating networks (via telex) to determine if they have information on the particular technology. If there are experiences on this topic, the Central Service Unit would collect the relevant information (e.g. technical information specifications, maintenance requirements, consultants available) and transmit it to the requesting unit.

However, if there was no relevant information within the network mechanism, the Central Service Unit would begin to develop a solution to this request. First, the Central Service Unit would search on-line data bases to see if they contained relevant information on the subject. The Central Service Unit would also search international documentation centers to see if they had data that related to the technical problem in question. Furthermore, the Central Service Unit would use its own resources and contacts to offer technical assistance to this request.

Thus, there are three levels of searches that the Central Service Unit would undertake to resolve the problem: (1) experiential information from other networks, (2) related experience, contacts, information from on-line data bases and international documentation centers, and (3) internal technical expertise and resources.

Resources Necessary for the Central Service Unit

The Central Service unit must have the cooperation of participating network organizations and the following resources to be effective:

- A telex and telecopier to facilitate transfer of requests and subsequent solutions;
- Access to on-line data bases;
- Linkages with other organizations and individuals to offer "know-how" to technical inquiries;
- Translation capabilities, to put the information into an understandable carrying language.

The primary element necessary for successful operation of the Central Service Unit is the cooperation of all network participants; without this cooperation, there would be no confidence nor reliance on the system.

In terms of electronic hardware, the Central Service Unit should be equipped with a telex and telecopier to facilitate rapid transmittal of information requests and responses. In addition, the Central Service Unit should have access to on-line data bases. Although it is not mandatory to have on-line capabilities in-house, it would be preferable in view of the number of anticipated technical inquiries. An alternative would be to use on-line services available elsewhere but in close proximity to the Central Service Unit.

The Central Service Unit also must be able to offer technical assistance in problem-solving through its own experience, skills, and expertise or through those of other global development agencies. By definition, in its position as a central service unit, the Central Service Unit must have access to AT information from all over the world.

Therefore, a major task will be to keep current on the state-of-the-art of appropriate technologies while remaining responsive to needs of national networks and regional coordinating units. This service will include information collection and dissemination in the form of current awareness bulletins, directories, newsletters, etc. in appropriate languages. The Central Service Unit will inform network participants about particularly interesting and transferable development activities elsewhere in the world.

A challenge to the Central Service Unit, but a goal that should be inherent in its mandate, is the necessity to facilitate continued service to the End-User.

Central Service Unit Outputs

The Central Service Unit will develop specific outputs as part of its role in servicing requestors. The Central Service Unit will develop a news-

letter/current awareness service, to inform network participants about those appropriate technologies that might be particularly transferable. Because of the Central Service Unit's position as a central point, it will assemble information from AT practitioners all over the world and prepare state-of-the-art manuals for use at the regional and national level.

The Central Service Unit will also work with data bases and other international development agencies to publish a directory of the resources of these types of organizations. This type of directory will help the regional and national networks locate the owners or holders of the desired resource, whether it be information, expertise, or funding. The Central Service Unit will also publish an abbreviated directory of significant regional activities, for use at the regional and national level, for quick reference to who is doing what.

Alternatives for Development of the CSU

The Central Service Unit can be organized and structured in a variety of ways at different stages in the network development.

Organizing options include:

- Developing the Central Service Unit linkage during the planning stage of the global network;
- Developing the Central Service Unit linkage once the national networks have been established;
- Developing the Central Service Unit linkages once the national networks and supporting regional structures have been established.

Methodologies for structuring the Central Service Unit include:

- Designation of the Central Service Unit by a funding source;
- Development of the Central Service Unit through group discussion at conferences or seminars;
- An interested organization assuming the leadership role and initiating the network process.

DATA BASE SURVEY

An information data base survey was performed with the objectives of investigating current state-of-the-art of such resources worldwide to be used as an information resource for the Central Service Unit. Both on-site and mail surveys were conducted with information on ninety-two data bases gathered. As a result of this survey, data bases with information about and related to appropriate technologies have been identified and mechanisms to access such data conceptualized.

For purposes of this survey a data base was defined as any information-containing mechanism, manual or computerized, which had a minimum of 1500 documents or pieces of information.

On-site Surveys

A total of forty-five organizations interviewed on-site met the above definition of a data base. The average holdings of these data bases were 37,000 documents. A total of 67,561 requests were answered each year by these organizations with the average being 1500 requests. The following organizations had totally or partially computerized data bases:

- Asian Institute of Technology - International Ferrocement Information Center (IFIC), Thailand;
- Environmental Liaison Center, Kenya*
- Instituto Tecnológico de Costa Rica, Costa Rica
- International Labor Organization (ILO), Switzerland
- Liklik Buk, Papua New Guinea*
- Korstic (Korean Scientific and Technology Information Center), Korea*;
- Ministry of Energy, Bureau of Energy Development, Philippines*;
- Organization for Economic Co-operation and Development (OECD), France;
- Royal Scientific Society, Jordan;
- Solar Energy Research Institute, United States of America;

*Partially computerized

- Technology Resource Center, Philippines;
- United Nations Environmental Program.

The following organizations were planning to computerize:

- Agricultural Projects Services Center (APROSC), Nepal;
- Alternative Sources of Energy (ASE), United States of America;
- Asian Institute of Technology - Renewable Energy Resources Information Center (RERIC), Thailand;
- Application of Science and Technology to Rural Areas (ASTRA), India;
- Caribbean Industrial Research Institute - Technical Information Service (CARIRI), Trinidad and Tobago;
- CENCIRA, Peru;
- Federacao de Orgaos para Assistencia Social e Educacional (FASE), Brazil;
- Instituto de Investigacion Tecnologica Industrial y Normas Technica (ITINTEC), Peru;
- Instituto Dominicano de Tecnologia Industrial (INDOTEC), Dominican Republic;
- International Rice Research Institute (IRRI), Philippines;
- National Institute for Development and Cultural Research, Botswana;
- Scientific Research Council, Jamaica;
- Thailand National Documentation Center, Thailand;
- TOOL Foundation, The Netherlands;
- United Nations Development Program (UNDP), Liberia;
- United Nations Industrial Development Organization (UNIDO), Austria;
- Volunteers in Technical Assistance (VITA), United States of America;
- West African Rice Research Association, Liberia.

The following organizations had manually accessible data bases and were not planning to computerize:

- Appropriate Health Resources and Technologies Action Group (AHRTAG), United Kingdom;
- Centro de Documentacion y Informacion Agricola (CEDIA), Honduras;
- Centre d'Etudes et d'Experimentation du Machinisme Agricole Tropical (CEEMAT), France;
- Centre de la Construction et du Logement a Cacavelli (CCL), Togo;
- Gesellschaft fur Technologische Zusammenarbeit (GATE), West Germany;
- Groupe de Recherche et d'Exchange Technologiques (GRET), France;
- Industrial Development Board (IDB), Sri Lanka
- Institut National pour le Developpement Economique et Social (INADES), Ivory Coast
- RAIN, United States of America;
- Rural Industries Innovation Centre (RIIC), Botswana;

- Technonet - (International Development Research Centre), Singapore;
- Tropical Products Institute (TPI), United Kingdom;
- World Health Organization - Program of Appropriate Technology, Switzerland;
- World Organizations of Scout Movement, Switzerland;
- Volunteers in Asia (VIA), United States of America

Data Bases Surveyed by Mail

A current resource directory of data bases and information systems, the Encyclopedia of Information Systems (Gale Research, 1979) was used to select 130 data base organizations (from a possible 2,008), which might contain information relevant to appropriate technology. Criteria used for mail survey selection were: (1) access must be unrestricted, and (2) the data base must contain scientific and/or technical information. Letters with survey questionnaires were mailed to the 130 selected data base organizations, asking if AT information, or scientific or technical information suitable for LDC's, was available. Forty-five responses were received. Of those responding, 21 had information related to AT or development efforts. Respondents with such information include:

- American Geological Institute- Geological Reference File, United States of America;
- American Society for Metals- Metal Information, United States of America;
- Latin American Population Documentation System (DOCPAL)- Chile;
- Forest Products Research Society-Abstract Information Digest (AIDS), United States of America;
- Georgia Institute of Technology- Information Exchange Center- United States of America;
- Institute for Scientific Information (ISI)- United States of America;
- International Development Research Center (IDRC)- Canada;
- International Patent Documentation Center (INPADOC), Austria;
- International Technical Centre for Rubber and Plastics (RAPRA), United Kingdom
- Johns Hopkins University- POPLINE- United States of America;
- Michigan State University- Non-formal Education Information Center- United States of America;
- North Carolina State University- Tobacco Literature Service- United States of America;
- Smithsonian Institution- Smithsonian Science Information Exchange (SSIE)- United States of America;

- Solar Energy Information Services (SEIS)- United States of America;
 - United Nations Food and Agricultural Organization (FAO) Documentation Center, Italy;
 - U.S. Dept. of the Interior - Natural Resources Library, United States of America;
 - U.S. Dept. of the Interior - Water Resources Scientific Information Center (WRSIC) - United States of America;
 - U.S. Geological Survey - Computerized Resources Information Bank (CRIB), United States of America;
 - U.S. National Institute of Education- ERIC/SMEAC, United States of America;
 - University of Oregon- Arid Lands Information System (ALIS), United States of America;
 - University of Florida Libraries- ICCC, United States of America.
- Descriptions of these 21 data bases are included in appendix # 5.

Summary

The purpose of the central coordinating unit is to facilitate national and regional cooperation and problem-solving. Although national networks and the regional coordinating units are autonomous in structure and function, the central service unit serves as a focal point for AT network interaction.

OPERATION AND MAINTENANCE OF THE AT NETWORK

VITA recommends that all organizational participants of the AT network operate their own networks in a manner that is consistent with local practices and needs. The structure of the AT network would be one that is as flexible as possible, although it is recognized that some administration and coordination will be necessary. In some cases, networks will be created based on already existing infrastructures; these networks will plan their operations to agree with the existing administrative practices, while meeting the needs of the network operation. All efforts should be made to build on existing activities.

Specifically, VITA recommends that where possible, existing resources be utilized rather than creating duplicative organizations. In this manner, network maintenance costs will be minimized as these groups will be providing the same functions, although at an increased level. Start-up costs will be minimal where such resources are already in place.

When this AT network would utilize the resources of existing institutions (e.g. translation or documentation centers), these organizations' efforts would be subcontracted, or, if feasible, offered as in-kind services for access to AT information and other network services.

While it is anticipated that the initial funding for this program will come from USAID, VITA recommends that the AT network become independent of USAID funding as soon as is feasible. Exact timing will vary dependent on the specific implementation models adopted and the progress of the network.

Six basic strategies for reduction of dependence on USAID funding are recommended:

- Incorporation into an existing organization (e.g. government ministry, university, development bank, etc.)
- Grants and donations from other public and private sector sources (e.g. aid programs of other donor countries, corporations, foundations, etc.)
- Contractual services provided to other development organizations (e.g. CARE, UNIDO, etc.)
- Sale of AT products and services
- Sale of AT publications, audio-visual materials and/or newsletter subscription fees
- Nominal membership fees from organizations and individuals participating in the network

The specific strategy (or combination of strategies) that is most likely to reduce dependence on USAID funding will vary from country to country and from model to model. All six models, however, are ultimately dependent on the ability of network units to provide goods and services that are perceived as being useful by organizations and End-Users.

A diversity of financial sources would provide the network with the greatest flexibility. Indeed, several of the alternative funding strategies hold out the prospect of increasing self-sufficiency not only from USAID but also from

public sector (e.g. host country government) support. However, VITA also recognizes the difficulty of service organizations becoming completely self-supporting and sees no early withdrawal of some type of public sector support for this network.

Nevertheless, VITA strongly recommends that the network(s) make every reasonable effort to diversify their funding by the generation of supplemental income from non-USAID, non-public sector sources.

The recurrent costs to operate this network are estimated to be fairly small, probably less than US \$50,000 per year, once the initial development work is completed. This estimate is based on the assumption that the network functions will be housed in already existing institutions, thus avoiding expensive organization, planning, and implementation stages. The networking functions will fit into the existing patterns, paper flows, hierarchies, and support services, of the organizations. In this manner, the recurrent costs will be minimal. (See National Networks Costs, p. 114).

STRENGTHENING ORGANIZATIONAL INDEPENDENCE THROUGH NETWORKING

The possibility of competition between AT groups working on similar programs or projects is a serious issue that threatens a network that is based on participant cooperation. This concern could be justified if the networks are designed to draw resources away from organizations and make them available only through network channels.

This valid concern should be addressed in a manner that will assure organizational stability and propriety of in-house resources. The network would work to facilitate the exchange of resources by directing interested parties to the

organization or individual having the information or service desired. Outputs of the networks will take the form of directories of organizations, services, activities, etc., current awareness services, newsletters, etc. These outputs should be developed so that they become an advertising tool for participating network organizations.

For example, an AT bibliography of organizational resources would be published so that persons wishing to obtain resources would go to the owner or holder of these resources listed in the bibliography. The search would not begin and end with the network. The network facilitates the contact between the requestor and the holder.

This non-aggressive, service approach will protect network participants against the loss of valuable resources and at the same time contribute toward the strengthening of participants through increased demand for their services.

INTERFACE OF EXISTING NETWORKS WITH PROPOSED NETWORKS

During the course of this survey, VITA identified approximately thirty-five formal international networks which currently: (1) facilitate AT information or resource exchanges, and (2) attempt to coordinate AT activities between countries. A listing of the more significant of these networks follows this section (see p. 73).

These networks fall into two general categories: (1) those in which AT is a minor, even incidental component (e.g. NTIS) and (2) those in which AT is a major, or predominant component (e.g. SATIS).

Within the latter category, various sub-categories can be distinguished:

Networks which facilitate the sharing of technical documentation (e.g. SATIS)

- Networks which facilitate access to funding (e.g. SOLIDARIOS)
- Networks which facilitate the sharing of program information about current AT activities (e.g. TRANET)
- Networks which serve a particular geographic region (e.g. COCOP in Latin America or RESADOC in the Sahel)
- Networks which service a particular type of organization (e.g. INFOTERRA linking government agencies or documentation centers)
- Networks which deal with a specific technology (e.g. IFOAM in organic agriculture, WHO/ATH in health, SIDN in small industries).

In addition, a number of international AT organizations have established informal or ad hoc networks of groups and individuals with which they frequently interact. Examples of such informal, unstructured networks include those of VITA, ITDG and GATE.

Rounding out the spectrum of AT networks are the countless interpersonal networks composed of the associates and acquaintances of individual AT practitioners. Such "circles of friends" may consist of dozens or hundreds of individuals in a number of countries. Such groups are inherently amorphous and difficult for non-members to identify or access. Nevertheless, personal networks do constitute a major source of information exchange between AT practitioners.

At present, efforts are underway to establish a number of new networks. Included among these proposed networks are:

- An alternative energy network being formed by VITA
- An energy-oriented network proposed by UNESCO
- A caribbean alternative energy network and an Eastern-Southern Africa bio-gas network proposed by the Commonwealth Secretariat
- An African AT network proposed by the several UN agencies
- A global NGO AT network recommended at the UNCSTD meeting

Inadequacies of Existing Networks

Despite the large number and great diversity of networking efforts, such networks do not currently provide adequate access to the resources needed by AT organizations and practitioners. The most frequently observed causes of

this failure are:

- Many AT practitioners do not know that particular networks exist.
- Membership in existing networks often is restricted by formal membership requirements (i.e. only certain types of organizations and/or only organizations in a certain region can join).
- The concept of networks and networking is not widely understood in many countries.
- The cost of participating in networks often is seen as being greater than the benefits derived from participation.
- Many networks are relatively new and frequently lack the resources needed to sustain themselves.
- Several networks have been oversold and their failure to meet unrealistically high expectations has led to distrust of networks in general.
- Many organizations are reluctant to "give up" any measure of control over their own activities or to subordinate their (usually short-term) interests to the (usually longer-term) interests of networking.
- There are substantial technical and geographic areas that are currently not serviced by an existing network.

In summary, there has been a strong tendency toward the proliferation of new and often specialized networks. Despite this network explosion, and perhaps because of it, networks do not currently meet the needs of AT organizations and practitioners.

Effective Utilization of Existing Networks

From the above analysis, it is evident that an international network such as the one proposed in this report must not be simply another network. Rather, what is needed is a mechanism to: (1) make existing international networks more accessible to and usable by AT organizations and individuals, and (2) fill the gaps between existing networks.

Specific guidelines to accomplish these objectives include:

- All national, regional and central coordinating participants will have detailed information on the objectives, membership, services, and access procedures of international networks which are relevant to their geographic area. Such information will allow focal points and requestors to directly access existing international networks.
- An international AT network will make its services available to existing

networks and will promote the enhancement of selected existing networks.

- An international AT network will seek to avoid duplication of existing networks' capabilities. For example, if a certain region is effectively served by an existing energy network, the international AT network would focus its activities in that region on sectors other than energy (although coordination between the two networks would continue).
- Whenever possible, existing networks and/or network elements will be incorporated into the international AT network, whenever such incorporation is acceptable to the existing network and will provide improved services to the users of the networks.

COMMUNICATION HARDWARE

The communication hardware necessary to support the rapid transfer of information should be as simple as possible and avoid burdening to the network system with hard-to-maintain computerized information systems. From the results of the survey, the following information needs were identified:

- experiential project information, i.e., appropriate technologies implemented under similar cultural and environmental conditions
- information on activities of other organizations, i.e., who is doing what
- higher level technological information among research and development institutes
- blueprints, drawings, and simple summaries of appropriate technologies
- identification of experts who can solve village level AT problems
- fast turnaround of information

To facilitate rapid transfer of information, a general communication plan linking designated national, regional, and central service units is proposed. This plan calls for a telex system to rapidly communicate requests, and a telecopier system, to send documents, thus eliminating the problems associated with mail service. Within each network, a designated agent would be equipped with these electronic devices, to allow for communication between networks.

Where such interactive communication has already been implemented, the networks should either follow the experience of those who have developed the system or suggest a compatible arrangement with them for system coordination.

If interactive communication is considered feasible in a country with no such previous experience, the network in that country would look to other countries with experiences for assistance. In those countries where reliance on telephone lines as an international connecting mechanism is not feasible, alternative solutions would be developed.

Maintenance of the Communications System

Installation, training, and maintenance of this communications system would be carried out by local affiliates of the equipment manufacturers. Distributors for manufacturers, such as, Burroughs and Xerox indicate, in the service contract, when scheduled maintenance will be performed and within what time, in the event of a breakdown, (service on the machine can be expected (usually less than 48 hours). As local sources would be used to service and maintain the machine, where such service is available, maintenance should not be a major problem.

U.S. distributors indicate that they have local distributors in the following countries:

- Philippines
- Indonesia
- South Africa
- Brazil
- Argentina
- Dominican Republic
- Haiti
- Panama
- Venezuela

Additionally, Burroughs indicates that service is expected to reach the following countries within the next six months:

- Barbados (and other Caribbean countries)
- Guatemala
- Peru

Sri Lanka
Kenya

As part of this project, U.S. distributors could be encouraged to expand their markets as part of network implementation.

Potential Costs for the Communication System

This proposed communication system provides the simplest way to facilitate the rapid transfer of information at minimum costs. Based on U.S. costs (as of February 8, 1980) the total combined monthly rental charge for the telex and telecopier machines would not exceed \$125.

Transmission costs are a variable factor, but can be estimated at \$12/min. Transmission costs are not expected to be high, as only those requests for assistance that cannot be answered at the national level would necessitate international communication charges. VITA's experience with a national documentation center in Upper Volta suggests that over 90% of the requests for assistance can be answered at the national level.

Total cost per network for interactive communication is not expected to exceed \$2,500 per year.

<u>Network</u>	<u>Focus</u>
AGID (Association of Geoscientists for International Development)	Global/Geoscience
COCOP (Comite de Coordinacion y Promocion de Tecnologia Apropiada)	Latin America
ELC (Environmental Liaison Centre)	Global; Non-Government Organizations/Environment
ICE (Peace Corps Information Collection and Exchange Program)	Global: Peace Corps Country Programs
IfoAM (International Federation of Organic Agriculture Movements)	Global/Organic Agriculture
IMAT (International Mechanism for Appropriate Technology)	Global
INADES (Institut Africain pour le Developpement Economique et Social)	Africa
INED (International Network for Development)	Global: Non-Government Organizations
INFOTERRA (International Environmental Information Network)	Global: Government Agencies/Environment
NFE NETWORK (Non-Formal Education Network)	Global/Non-Formal Education
NTIS (National Technical Information Service - Technical Information Network)	Global
CLADE (Organizacion Latinoamericana de Energiá)	Latin America: Government Agencies/Energy
RATC (regional Adaptive Technologies Centers)	Asia
RESADOC (Sahelian Scientific and Technical Information and Documentation Network)	West Africa
RNAM (Regional Network for Agricultural Machinery)	Asia & Pacific/Agricultural Machinery
SATIS (Socially Appropriate Technology Information System)	Global/Documentation
SIATE (Red de Servicios de Informacion y Asistencia Tecnica a las Empresas en American Central y el Caribe)	Central America & Caribbean/Industrial Technologies

<u>Network</u>	<u>Focus</u>
SIDN (Small Industries Development Network)	Global/Industrial Technologies
SOLIDARIOS (Consejo de Fundaciones Americanas de Desarrollo)	Latin America/Financial Support
TECHNONET ASIA (Asian Network for Industrial Technology Information and Extension)	Asia/Industrial Technologies
TRANET (Transnational Network for Appropriate Technology)	Global/Newsletter

**SECTION 8: RECOMMENDATIONS:
MODELS, CRITERIA, AND ACTION PLANS**

LAUNCHING MODELS

Given the three tiered focus of this international AT network, there are eight alternative models that could be used to initiate the program.

These alternatives include the development of:

1. National Networks
2. Regional Coordinating Units
3. The Central Service Unit
4. National Networks and Regional Coordinating Units
5. Regional and The Central Service Unit
6. National Network and the Central Service Unit
7. National Networks, Regional Coordinating Units and The Central Service Unit
8. Encouraging Existing Networks to increase sharing of resources.

Each model will be described in terms of positive and negative features inherent in their applications and approximate costs.* A capsule view of each model is contained in the matrix on page 83.

MODEL 1 -- NATIONAL NETWORKS

This model focuses on the development and support of national AT networks. It includes organizing networks where such activities have not yet begun and supporting such activities where they already have been initiated.

Positive Features

This is a grass roots approach to networking which would consider the needs and desires of the network participants. If sensitively designed and organized, the product would be a network that is responsive to the needs of its local participants.

*These estimates are based on U.S. costs and would vary from country to country, based on local conditions, exchange rates, etc.

Negative Features

This approach would not provide for coordinated activities between AT networks. Nor would this model create a mechanism for interaction with external networks and data bases.

Costs

The cost for organizing Model 1 is estimated to be \$75,000/network. (See sample budget, page 114). Where such networks have been organized already, a breakdown by country of required additional financial support would be made if this model were selected.

MODEL 2 -- REGIONAL COORDINATING UNITS

This model focuses on the development of regional coordinating units. The regional coordinating units would assist in the development of networks at the national level. Additionally, they would coordinate sharing of resources among national networks.

Positive Features

This approach would be especially cost effective for those areas that are too small to support a national center in each country (such as The Windward Islands in the Caribbean). This approach also reduces the number of initiating points in the network.

Negative Features

This approach if not sensitively planned and implemented runs the risk of "outsiders" organizing local networks which could lead both to inappropriate structuring and resentment from local participants.

Costs

The cost of organizing such a network would be similar to that of organizing a national network. However, some expenses such as transportation costs (to organizing meeting) would be greater. Estimated cost is \$95,000. (See sample budget, page 115).

MODEL 3 -- THE CENTRAL SERVICE UNIT

This model focuses on The Central Service Unit's capability to (1) interact with data bases, (2) establish relationships and agreements with other external networks, and (3) develop linkages to additional technical assistance and expertise.

Positive Features

This approach would encourage the development of relationships necessary to fund and support future network activities. It would allow for association with development organizations external to the AT network that are also important for this network's success.

Negative Features

This approach is furthest from the local level. Possible problems include: (1) service primarily to organizations rather than End-Users, and (2) political problems associated with "centralized" functions. Also, no local activities are planned in this approach; therefore, grass roots development would not be actively supported and encouraged.

Costs

Developing the capabilities of the central service unit is estimated to be approximately \$150,000. (See sample budget, page 116).

MODEL 4 -- NATIONAL NETWORKS AND REGIONAL COORDINATING UNITS

This approach focuses on the development of national networks in addition to a regional structure to coordinate the networks' activities within the region.

Positive Features

This approach would initiate local, grass roots activity as well as develop the necessary coordinating mechanisms between networks. It would involve an easily manageable number of initiating areas, e.g., fifteen countries and two regions.

Negative Features

This approach does not allow for those countries not wanting to participate in a regional framework; they would be excluded from the benefits of networking. As two levels of networking would be developed, associated costs would be higher.

Costs

The estimated cost to organize a national network is \$75,00; estimated cost per regional coordinating unit is \$95,000.

MODEL 5 -- REGIONAL COORDINATING UNITS AND THE CENTRAL COORDINATING UNIT

This model focuses on the development of the regional coordinating units linkage to all regional participants as well as the central service units' association with regional agents, external networks and data bases.

Positive Features

This approach would be strong in established administrative procedures as it would consist of a hierarchy of organizational structures. The

necessary support mechanisms for (1) international AT transfer, (2) interaction with data bases, and (3) external networks would be in place.

Negative Features

This approach does not actively encourage local participation which is the purpose of the AT network system. Rather, this model consists of a structural hierarchy that does not respond directly to End-Users.

Costs

The estimated cost for developing a regional coordinating unit is \$95,000; the estimated cost for the central coordinating unit is \$150,000.

MODEL 6 -- NATIONAL NETWORKS AND THE CENTRAL SERVICE UNIT

This model focuses on the development and support of national networks in addition to the establishment of a central service unit to create linkages with national networks, external networks, and data bases.

Positive Features

This approach allows for both local and centralized development. Local participation would be supported actively and a mechanism established through which to share experiences internationally and to access external information sources.

Negative Features

This approach by-passes those areas that are interested in a regional approach and, therefore, does not support a coordinated effort of regional resource sharing.

Costs

Estimated cost per national network is \$75,000; estimated cost for the Central Service Unit is \$150,000.

MODEL 7 -- NATIONAL NETWORKS, REGIONAL COORDINATING UNITS, AND THE CENTRAL SERVICE UNIT

This is a comprehensive approach which initiates national activities, coordination between regions, and the international sharing of resources.

Positive Features

This approach provides for establishment of all structures necessary for the complete flow of information, experts, and funds to the End-User in need. In addition, transfer, adaptation, diffusion and implementation are inherent in this model.

Negative Feature

In this approach, in which all three levels of the network would be developed, associated costs would be significantly higher.

Costs

The estimated cost of each national network is \$75,000; the estimated cost of each regional coordinating unit is \$95,000; the estimated cost of The Central Coordinating Unit is \$150,000.

MODEL 8 -- ENCOURAGING EXISTING NETWORKS

This model would not create any of the proposed structures but would encourage existing, and external networks to coordinate resource sharing when possible.

Positive Features

This approach avoids the creation of yet another organizational structure and, therefore, eliminates the administrative problems involved in any such structure.

Negative Features

This approach would not respond quickly, efficiently, or effectively to the needs of End-Users who, presently, are not being served adequately by these networks.

Costs

It is not possible to estimate the cost of this option, since a survey of network needs was not performed in the course of this study.

FIGURE 3: LAUNCHING MODELS (continued)

	<u>MODEL FIVE</u> Regional and Central Coordinating Units	<u>MODEL SIX</u> National Networks and the Central Coordinating Unit	<u>MODEL SEVEN</u> National Networks, Regional Coordinating Units and Central Coordinating Units	<u>MODEL EIGHT</u> Encouraging Existing Networks
DESCRIPTION	Coordination of all regional participants Interaction with data bases Interaction with established networks Linkage development	Development of national AT networks and central mechanism Linkages created with AT national networks, external networks and data bases	Development of a comprehensive network utilizing national, regional and central mechanisms	Encouragement of resource sharing by existing, external networks
POSITIVE FEATURES	Strong in administrative support	Allows for local and centralized development Fosters resource sharing	Inclusion of all network structures Allows for complete information flow Considers all components of AT Development Model	Avoids creation of another organization
NEGATIVE FEATURES	Does not actively encourage local participation Consists of a structural hierarchy	By-passes regional coordination	Significant costs with at least three network levels	Does not effectively respond to the needs of end users
COSTS	Variable combination of previous estimated costs	Variable combination of previous estimated costs	Variable combination of previous estimated costs	Costs unknown

	<u>MODEL ONE</u> National Networks	<u>MODEL TWO</u> Regional Coordinating Units	<u>MODEL THREE</u> Central Coordinating Unit	<u>MODEL FOUR</u> National Networks and Regional Coordinating Units
DESCRIPTION	Development of national AT networks Support of existing AT networks	Assist in development of national AT networks Coordinate resource sharing among AT networks	Interact with data bases Interaction with external networks Linkage development	Development of national and regional AT networks to coordinate activities in region
POSITIVE FEATURES	Grass roots approach Responsive to local needs	Cost effective for areas too small to support a national AT center in each country Reduces number of initiating points	Development of relationships for funding and support Association with external organizations	Grass roots approach Coordinating mechanism between networks Easily manageable number of initiating points
NEGATIVE FEATURES	Does not provide for coordination between AT networks No mechanism for interaction with external networks	Does not involve the local level in organization	Furthest from local level Service primarily to organizations, not end users Grass roots development not actively supported	Does not allow for local participation not interested in regional activities Increased costs with two network levels
COSTS	Estimate: \$75,000	Estimate: \$95,000	Estimate: \$150,000	Variable combination of previous estimated costs

FIGURE 3: LAUNCHING MODELS

NETWORK EVALUATION CRITERIA

This section will (1) identify criteria upon which to evaluate the potential for networking of a nation and (2) evaluate the countries that were visited on-site in relation to those criteria.

CRITERIA

Five criteria have been established as necessary for the development of a national network.

- Presence of "leader" agencies. These are the agencies which could play a significant role in the development of a national AT network. These agencies must have the following:
 - organizational goals that are focused on AT or village level development activities,
 - extensive linkages with End-Users and other organizations in the same, and different, functional categories,
 - Institutional stability, indicated by history, budget, and staff size.
- Presence of a national focal point.
- Government interest in or support for AT activities. Indications of this interest or support are:
 - financial commitment to AT organizations,
 - policy commitment to AT development.
- Presence of key networking elements. These elements include:
 - a documentation center focused on AT,
 - translation capabilities,
 - marketing agencies,
 - research and development agencies,
 - document simplification facilities,
 - skills banks,
 - field staffs or extension programs,
 - governmental and non-governmental funding organizations,
 - small business development organizations,
 - electronic communications (telex/telecopier).
- Extensive AT activity.

Based on the number of criteria met, the countries visited were ranked according to their readiness for networking. A high state of readiness was indicated by the presence of four or five elements. An intermediate state of

readiness was indicated by the presence of three elements. A low state of readiness was indicated by the presence of none, one, or two elements.

Countries belonging to each of the evaluative categories are listed below. The names of "leader" agencies are also listed for each country.

<u>Level of Readiness</u>	<u>Nation</u>	<u>Leader Agencies</u>
<u>ASIA</u>		
High	India	AFPRO Gandhi Peace Foundation A.T. Development Association
	Pakistan	ATDO
	Indonesia	Dian Desa National Scientific Documentation Center LIPI Development Technology Center
	Philippines	Institute of Small Scale Industry Philippine Center for Appropriate Training & Technology

Inter- mediate	Thailand	Thai National Documentation Center Population and Community Development Assoc.
	Nepal	Agricultural Projects Service Centers Research Center for Applied Science & Technology
	Sri Lanka	Sarvodaya Industrial Development Board
	Papua-New Guinea	South Pacific A.T. Foundation Liklik Buk Information Center

Low	Fiji	University of South Pacific
	Korea	Korea Scientific & Technological Information Center

<u>Level of Readiness</u>	<u>Nation</u>	<u>Leader Agencies</u>
<u>AFRICA</u>		
High	Senegal	ENDA
	Ivory Coast	ONPR PHUDO/AID INADES
	Tanzania	Arusha Appropriate Technology Project Small Industries Development Corporation Christian Council of Tanzania
	Kenya	National Council for Science & Technology Catholic Relief Services Environment Liaison Center Christian Industrial Training Center Karen Village Technology Center
	Botswana	Mennonite Central Committee Rural Industries Innovation Center Pelegano Village Industries Botswana Technology Center BRIDEC University of Botswana Botswana Enterprises Development Unit Kweneng Rural Development Association
- - - - -		
Inter- mediate	Mali	Project Energie Renouvelable CARE/Mali
	Togo	CCL
	Nigeria	IITA Christian Rural Development Integrated Education for Development
- - - - -		
Low	Cameroun	
	Liberia	Appropriate Technology Resource Centre U.S. Peace Corps

NEAR EAST

Inter- mediate	Jordan	Royal Scientific Society Catholic Relief Services
-------------------	--------	--

<u>Level of Readiness</u>	<u>Nation</u>	<u>Leader Agencies</u>
<u>LATIN AMERICA</u>		
High	Jamaica	Caribbean Conference of Churches Small-Enterprise Development Corporation College of Arts, Science and Technology Scientific Research Council
	Guatemala	CEMAT
	Honduras	CDI
	Peru	ITINTEC CCTA
- - - - -		
Inter- mediate	Costa Rica	Instituto Tecnologico de Costa Rica CITA IICA
	Trinidad & Tobago	Trinidad & Tobago Community Development Foundation CARIRI CARDI Industrial Development Corporation
	Ecuador	ICE FED
- - - - -		
Low	Dominican Republic	Indotec Fundacion Dominicana de Desarrollo
	Argentina	FUNDAPAZ
	Venezuela	INDEC
	Brazil	FASE
	Uruguay	IPRU CCU

ACTION PLAN

In the course of the survey, participants were asked to identify their preferences for the types of network structure to be established and supported. Regional results are listed below (see Table 13, p. 156).

- Asia
Preference for regional and national structures; central coordinating unit concept also supported.
- Africa
Preference for a central structure; regional and national structures strongly supported.
- Latin America
Strong support for the regional concept.
- Near East
Partial results suggest a preference for national networking.

VITA believes that these preferences should be integrated into any recommendations for implementation of launching models. VITA recommends the following launching models, which reflect regional preferences.

- Asia
Model Four, the development of national and regional structures; and Model Eight, the encouragement of existing external networks.
- Africa
Model One, development of national structures; Model Eight, encouragement of existing external networks; plus Model Three, development of the central coordinating unit.
- Latin America
Model Two, development of regional coordinating unit and Model Eight, encouragement of existing external networks.
- Near East
Given the somewhat negative reaction to the network concept, Model Eight with limited Model One activities.

VITA also recommends that Model Three, the development of the central coordinating unit be initiated because of the eventuality of such a unit and the expression of support for this concept from the African and Asian respondents.

PHASING

The following by-region phasing schedules provide a general timetable for the implementation of AT networking plans for each region. These are based on the above launching models.

- Asia
 - Year 1 & 2
National networking; beginning of regional coordination through newsletters, directors.
 - Year 3
Regional coordinating units organized; connection with other networks established.
- Africa
 - Year 1 & 2
National networking; beginning of regional coordination.
 - Year 3
Ad hoc regional networking; functioning relationship with central service unit.
- Latin America
 - Year 1 & 2
Regional coordinating units establishment and integration with existing networks; national networking encouraged.
 - Year 3
Functioning relationship established; relationship with central service unit developed if desired.
- Near East
 - Year 1 & 2
Encouragement of expansion of services; establishment of national networking.
 - Year 3
Additional networking; ad hoc regional networking beginning.

ROLE OF A CATALYST AGENCY

In the following proposed action plans, networking on a national level has been emphasized. Where a national, lead agency has been designated as a focal point for AT development by national governments, networking should be coordinated through that group. However, where no designated focal point exists, a process should be developed to examine or select such a focal point. During this process (which still would heavily rely on local input), USAID

should identify a catalyst agency to facilitate organization of networking within countries.

The role of such a catalyst agency would be to: (1) assist local groups in choosing a lead agency to serve as a focal point to coordinate network activities, (2) work as liaison between AID missions and AID/Washington to insure that goals of the AT network are being met, and (3) help identify and coordinate organizations that will share resources as part of the network plan.

It is estimated that the catalyst agency will be operative for two to three years during which time it will make certain that network interaction is successfully functioning. Once an active network system exists, the catalyst agency will be phased out of the program.*

USE OF SMALL GRANTS

Small grants (under US \$10,000), designed to eliminate selective constraints that retard the promotion, development, and dissemination of appropriate technologies, would be awarded by and administered through designated network agencies. This small grant program would work to reinforce the networks capability to provide needed resources to participants, as funding was indicated as one of the desired resources. This reinforcing process would have a very beneficial effect for networking, as one of the significant resources to AT development, funding, would become more readily available through the network.

Depending on national and local needs, such grants could be used by AT oriented organizations for the following purposes:

- AT demonstration/pilot projects, including prototype construction, designed to test the usefulness of a particular appropriate technology in the indigenous setting

*See Sample Catalyst Budget

- Establishment or strengthening of local AT groups (documentation/inquiry services, consultant skill banks, workshops, etc.) in order to improve support services to AT participants
- Sponsorship of conferences, seminars, and workshops to bring AT practitioners together for planning, information sharing, networking and training
- Needs and Resources assessments, designed to pinpoint specific End-User needs, technologies/techniques in use that could meet needs, and institutional resources that could be utilized to prepare a response to these needs
- Preparation and distribution of publications, (including translation, and simplification) designed to provide necessary instructions for construction
- Training of local personnel in such fields as use of information services, project documentation, project support and monitoring

PROPOSED ACTION PLAN: ASIA

INTRODUCTION

There was a great deal of support and interest in networking expressed by organizations and individuals involved with AT development in Asia. VITA recommends the use of Model Four, development of national and regional networks. The action plan calls for the establishment of three national networks (Indonesia, Philippines and Sri Lanka) during the first two years of the plan. In the third year, a regional coordinating unit would be established. The ensuing years would see further development of national and regional coordination.

INDONESIA

A national focal point for networking activities, LIPI, already has been established by the government and is functioning. National networking also is

being carried out by Dian Desa, which is providing financial support for village-level development projects in conjunction with Appropriate Technology International (ATI). Institutes such as these should be encouraged.

Many elements of national networking are already present in Indonesia, including:

- Leader Agencies- LIPI, Dian Desa, National Scientific Documentation Center, Development Technology Center
- A national focal point- LIPI
- Government funding of AT activities
- Network support functions- field staff/extension agents, volunteers, documentation centers, translations capabilities, research and development institutes, document simplification facilities
- Significant AT activities

In the course of carrying out the networking project, some elements will need to be expanded and strengthened; the exact steps to be taken will be determined during the initial years of the project.

Action Plan

- The first phase of this project would be to support the development of LIPI as a national focal point. LIPI officials indicated that they needed approximately \$100,000 to add physical space for the library collection, to purchase communication equipment (photocopying, stencil machines) and add staff necessary for the networking. A specific arrangement to support LIPI's activities should be negotiated during the initial year of the project.
- The collection of experiential information should be encouraged in the first year of the project. Documentation forms must be short, simple and easy to complete.
- The Dian Desa/ ATI initiative should be monitored and supported with any necessary resources.

At the end of the initial period, years 1 and 2, a national focal point would have established the necessary linkages to other and new AT organizations and practitioners. Also, the most important data collection activity, the documentation of AT use in the field, would have begun. Finally, a methodology for diffusing small grants would have been tried and evaluated.

Estimated Cost

First Year

LIPI Support	\$100,000
Technical assistance for documentation center expansion, field staff training document adaptation *	100,000

Second Year

LIPI on-going coordination costs	55,000
Network Support/Small Grants	50,000
Technical Assistance	50,000

Total- Initial Phase \$355,000

PHILIPPINES

Informal networking has begun in the Philippines. A substantial number of Filipino groups are working in AT, many of whom are already sharing resources.

Many elements of networking are already in place in the Philippines, including:

- Leader Agencies- Institute of Small Scale Industry, Philippine Center for Appropriate Training and Technology, Technology Resource Center, International Rice Research Institute, and Ministry of Energy
- Government support of AT activities
- Network support functions, such as field staffs, skills banks, documentation centers, documentation simplification facilities, translation capabilities
- Significant AT activities

The benefits from networking would be substantial.

Action Plan

- In the first phase of the action plan, initial network organization would be undertaken. This would require hiring a person to develop the initial inter-agency foundation. This person would analyze current organizational clientele and make contacts with those persons who are sometimes left out of the planning scheme. For example, types of people often overlooked in such planning are farmers experimenting with small scale modified irrigation systems, or mechanics making solar collectors in their own shop.

- This person would have as his goal the holding of a conference during the initial year, at which all segments of the AT community would help to develop a plan for national networking.
- During the first year, a data collection effort would be initiated to capture information on the experience of AT practitioners.
- Once network planning is accomplished, the support of organizations to service End-Users would be undertaken. Through this process, network roles would be established, and further strengthening would be based on the clear definition of roles assumed in the network. Strengthening based on the national plan will avoid unnecessary duplication.

AT groups in the Philippines indicated they would need some assistance, most thought less than \$20,000. to expand their activities. Areas of expansion mentioned were similar for all groups, including: (1) desire to employ documentalists, and (2) need to purchase communications equipment (mimeograph machines, photocopying machines, etc.). With a network established and functioning, all organizations would not need the same strengthening and/or equipment.

Estimated Costs

First Year

Organizing costs*	\$75,000
-------------------	----------

Second Year

Network coordination on-going costs	55,000
Network support/small grants	100,000
Technical Assistance	100,000

Total- Initial Phase	\$330,000
----------------------	-----------

SRI LANKA

Little networking activity was discovered during the on-site data collection effort. Some activity towards the establishment of a national focal point has been initiated, but it is still in its formative stage. Some elements of networking are present, including:

* - See sample budget for launching a national network at the end of this section.

- Leader Agencies - Sarvodaya, Industrial Development Board, National Science and Technology Council of Sri Lanka
- Government interest in AT activities
- Network support elements, including field staffs, and volunteers (but no AT documentation center)
- Some AT activity

Networking in Sri Lanka will be a particularly interesting project as AT networking activity is only being considered by a small number of people. Initial efforts would include introduction of the network concept and generation of enthusiasm.

Action Plan

- Initial organizing would be undertaken. This organizing would include: (1) establishing contacts with AT groups and users, (2) expanding contacts beyond the usual ones to the non-publicized users of AT, (3) explaining the goals of the national networking effort, and (4) generating enthusiasm for the national networking effort. This initial networking would be accomplished in the first year by providing small grants for AT projects and networking activities.
- A founding conference would be held at the beginning of the second year. From this effort, and the subsequent activity, a plan for supplying network services would be developed. It is this plan that would be the basis for the strengthening of organizations to give expanded service to End-Users.
- During the second year, data collection, focusing on successful applications of AT would be initiated.

Sri Lankan groups that responded to the survey indicated a need to hire documentalists in order to: (1) preserve records of their activities, and (2) interact with other networking groups. This type of organizational strengthening should be based on the plan that would emerge from the conference and following activities.

Estimated Costs

First Year

Network Coordination	On-going costs	\$55,000
Small grants		10,000

Second Year

Organizing Costs	\$75,000
Total- Initial Phase	\$140,000

ASIAN REGIONAL NETWORKING

The development of an Asian regional coordinating unit would begin in the third year of this action plan. Those networks established through this action plan, other national AT networks (such as an Indian network being initiated by the Gandhi Peace Foundation), AT practitioners, and related institutions would meet to plan ways for regional cooperation. From this planning phase would come an implementation schedule, with designated organizations and individuals assuming agreed upon roles.

PROPOSED ACTION PLAN: AFRICA

African organizations and individuals indicated a preference for relationships with national networks and a central service unit. Therefore, the African Action Plan calls for the development of three national networks: (1) South Africa (Botswana), (2) East Africa (Kenya) and (3) West Africa (Senegal). These three networks would then share resources in the later implementation stages through the developing central service unit, thus providing an opportunity to test this mode of resource sharing.

While no formal regional coordinating is recommended, regional networking may take place on an ad hoc basis with these national networks, and other networks that might develop, sharing resources when appropriate. Such regional networking can best be facilitated through bi-lateral contacts between network participants. Conferences, seminars, and workshops will also help to facilitate regional sharing of resources.

BOTSWANA

A number of very strong networking elements are already in place in Botswana. A national focal point, the Botswana Technology Center has been established (October, 1979) and is apparently well-received by AT organizations and individuals. Leader agencies have indicated their recognition of the need to communicate and coordinate their activities. This recognition resulted in a November, 1979 conference of AT organizations and practitioners to discuss ways to increase this cooperation.

The national networking elements already in place in Botswana include:

- Leader Agencies- Botswana Technology Center, Rural Industries Innovation Centre, BRIDEC, Pelegano Village Industries
- A national focal point - Botswana Technology Center
- Government funding of AT activities
- Network support functions, including field staffs, volunteers, documentation centers, etc.
- Significant AT activities

Action Plan

- Initial activity should focus on the strengthening of the Botswana Technology Center. Officials at the BTC indicated that they needed approximately \$75,000 to acquire publications, hire staff, and establish an AT documentation center. This would be a first year project.
- Also as a first year activity, initial data collection from various AT groups would commence.
- Strengthening of network institutions, particularly research and development institutes, would be initiated in the second year. This strengthening of national organizations would resolve some of the major bottlenecks of AT development in Botswana.

Estimated Costs

First Year

Support to BTC	\$75,000
Technical assistance for field staff training, documentation center development, publications adaptation	55,000

Second Year

On-going network coordination costs	\$55,000
Network Support/Small Grants	100,000
Technical assistance	50,000
Total - Initial Phase	\$335,000

KENYA

Despite the wide range of AT activities in the country, little concerted effort has been made to coordinate AT activities or to begin networking among AT practitioners. However, many elements necessary for successful networking are present, including:

- Leader Agencies- Karen Village Technology Center, National Council for Science and Technology, Environment Liaison Center
- Government support for AT activities
- Network support functions, including research and development institutes documentation centers, translation capabilities, etc.
- Extensive AT activities

Action Plan

- Network organizing should be accomplished in the first year. The process for this organizing would be similar to that already described in the Action Plan for the Philippines. A plan for network implementation would be produced during this initial phase.
- Based on this plan, and also as a first year activity, documentation of AT activities would be initiated.
- Strengthening of network elements would begin in the second year of the project. Strengthening would focus on expanded outreach capability to rural areas, and other organizational support.

Estimated Costs

First Year

Organizing Costs	\$75,000
------------------	----------

Second Year

On-going network coordination costs	\$55,000
Network Support/Small Grants	100,000
Technical assistance	100,000
Total - Initial Phase	330,000

SENEGAL

Development of a national network in Senegal has significant interest, as it would provide a vehicle to test different ways to address the problem of differing languages. AT network activities could provide an interesting test study for Francophone Africa.

National networking elements in Senegal include:

- Leader Agencies- ENDA
- Government support for AT activities
- Network support functions such as documentation centers, translation capabilities, document simplification facilities, etc.
- Substantial AT activities

Action Plan

- Organizing activity should be initiated in the first year. ENDA has already made substantial efforts in networking organization; therefore, this stage should be brief and simple in execution.
- A plan would be generated from this initial networking activity. This plan would be the basis for further efforts to strengthen organizations in the national network. Network strengthening could begin in the second half of the first year.
- Documentation of present AT activities would begin in the first year.
- Networking activities would be further strengthened in the second year.

Estimated Costs

First Year

Organizing costs	\$75,000
	20,000
Technical assistance in documentation center development, training of field staff, document adaptation	50,000

Second Year

On-going network coordination costs	\$ 55,000
Network Support/Small Grants	60,000
Technical assistance in project development/ management support, skills bank development	50,000
Total - Initial Phase	\$310,000

AFRICAN - CENTRAL SERVICE UNIT NETWORKING

In the third year of this project, African networks would begin sharing resources through the Central Service Unit. Descriptions of how the Central Service Unit will function and provide assistance to these networks are discussed in detail in the Central Service Unit Action Plan (see p. 107).

PROPOSED ACTION PLAN: LATIN AMERICA

Latin America survey results indicated the strongest interest in the development of regional coordinating units. VITA recommends that Model 2, the development of such regional units, and Model 8, the encouragement of existing networks, be utilized as the launching models for Latin America.

Many of the necessary elements for regional cooperation are present in Latin America, including:

- Potential cooperation of AT practitioners
- Documentation Centers
- Telex/telecopier systems
- Linkages to other organizations

The National Technical Information Service (NTIS) has an on-going, USAID supported AT information program in Latin America and the Caribbean. The NTIS network countries include: Bolivia, Barbados, Brazil, Chile, Colombia, Costa Rica, Dominican Republic, Ecuador, El Salvador, Guatemala, Haiti, Honduras, Jamaica, Mexico, Nicaragua, Panama, Paraguay, Peru, and Venezuela.

The NTIS network is a valuable resource for obtaining U.S. government supported appropriate technology information available through the NTIS clearinghouse. Leader agencies identified in Guatemala, Honduras, Jamaica, and Peru, include the NTIS affiliates.

The experiences and leadership of these agencies will be an important resource in developing this AT network, as the focus is to build on existing efforts, rather than duplicate these efforts.

VITA recommends that in order to develop regional coordinating units to serve AT participants in this region, four sub-regional units be established: (1) Caribbean, (2) Central America, (3) Andean, and (4) Brazil/Southern Cone region.

CARIBBEAN

The Caribbean region is just beginning to focus on AT, with a number of major institutions devoting resources to such development. Due to the geographical dispersion of the islands, Caribbean AT development planners indicated that a regional approach would be the most sensible for this area.

Action Plan

- The Caribbean Development Bank was identified by a number of AT groups as a potential regional coordinating unit. The CDB also sees itself performing this role. The CDB should take a major role in organizing a regional coordinating unit. The organizing conference for the regional unit should be held in this first year.
- If the CDB is identified as the regional coordinating unit, its resources should be strengthened in order to serve Caribbean AT groups. This strengthening should occur in the area of documentation center development and networking activities. National networking would be encouraged.
- Other organizations that could play a significant role in Caribbean AT activities should be strengthened. Prominent in this group are Christian Action for Development in the Caribbean (CADEC), Caribbean Agricultural Research and Development Institute (CARDI) and Caribbean Industrial Research Institute (CARIRI).
- Finally, there are islands in the region which are too small to support a national AT network. The regional coordinating unit would assist in the development of a mix of national and regional resources to bring these people into the regional and international network. This would be a second year project.

Estimated Costs

First year

Organizing Costs*	\$ 95,000
-------------------	-----------

Second Year

On-going operational costs	65,000
Network Support/Small Grants	100,000
Technical Assistance	100,000

Total - Initial Phase	\$360,000
-----------------------	-----------

- See sample budget for launching a regional coordinating unit

CENTRAL AMERICA

Regional networks have already been planned for Central America. These networks include COCOP, an organization focused on sharing AT information with headquarters in Guatemala. Additionally, internationally known AT groups, such as CEMAT, work in this region. Activities in this region should be based on these very strong building blocks.

Action Plan

- Organizations and individuals in Central America indicated a need for expanded support to on-going networking activities. Prominently mentioned as a potential regional networking agent was COCOP. During the first year, resources should be made available to COCOP to allow for expanded service to its presents network participants.
- Another first year activity would involve expansion of COCOP's service to new organizations and individuals.
- National networking would be encouraged in order to develop the necessary infrastructure to support AT development activities. National networking activities are now in the planning stages in El Salvador and Panama. Support for these activities would continue throughout the project. Specific activities would be planned during the second year.
- Also as a second year activity, capabilities of existing Central American organizations such as CEMAT in Guatemala, should be strengthened.

Estimated Costs

First Year

Strengthening of COCOP	\$ 50,000
------------------------	-----------

Second Year

National networking support	50,000
Network Support/Small Grants	100,000
Technical Assistance	100,000

Total - Initial Phase	300,000
-----------------------	---------

ANDEAN REGION

In this region, there is great diversity in AT development. Groups working on AT have not interacted extensively with development agencies from developed countries. They have tended to work independently or only with other national groups.

Based on limited knowledge of the situation, VITA recommends a limited effort in the initial period, working closely with USAID missions, established groups and known AT users. Some groups, such as CCTA in Peru are already planning national conferences. These activities should be encouraged. VITA's recommendation, based on the preferences of survey respondents, is to start some regional activity and to encourage national and village level AT development.

Action Plan

- National networking efforts in the region should be encouraged. Most of these countries have strong existing leader agencies (FUNDAEC in Colombia, CCTA and ITINTEC in Peru, ICE in Ecuador, CIT in Bolivia) and these organizations should be supported if they take a leadership role.
- Interested AT participants would meet to begin regional cooperation. This activity would take place at the beginning of the second year.
- Based on the plan generated for regional cooperation, organizations would have their resources strengthened where necessary. Expressed needs included: (1) development of documentation centers, (2) expansion of field staff, and (3) improvement of capabilities for administrative support.

Estimated Costs

First Year

Encouragement to national networks

560,000

Second Year

Regional Organizing Costs	\$95,000
Network Support/Small Grants	50,000
Total - Initial Phase	\$204,000

BRAZIL/ SOUTHERN CONE

A similar situation occurs in the Brazil/Southern Cone region as in the Andean; there exists diversity in AT development, but little interaction between national, and developed country organizations. These agencies have tended to work independently or only with other national groups. VITA recommends initiation of some regional activity and encouragement of national and village-level AT development.

Action Plan

- National networking efforts in the region would be encouraged. Leader agencies include FASE in Brazil, CCU and IPPU in Uruguay, FUNDAPAZ and INDES in Argentina. These agencies should be supported if they take local initiatives.
- At the beginning of the second year, interested AT participants would meet to begin the process for regional cooperation.
- Based on the plan generated for regional cooperation, organizations would have their resources expanded in order to expand their services to the requestors.

Estimated Costs

First Year

Encouragement to national networks	\$60,000
------------------------------------	----------

Second Year

Regional Organizing Costs	95,000
Network Support/Small Grants	50,000
Total - Initial Phase	\$204,000

LATIN AMERICAN INTER-REGIONAL NETWORKING

In the third year of this action plan, coordination among the four Latin American regions would begin. After national agencies have developed their AT capabilities and regional coordinating units become active, cooperation among the regional coordinating units would be encouraged.

PROPOSED ACTION PLAN: NEAR EAST

In the Near East region, there was not a very positive response to the networking concept. Therefore, Model 8, the support of existing networks, is recommended. Model 1, development of national networks, should be initiated as a second year, secondary activity. This approach would reflect the preference expressed by survey respondents and develop a base from which to work for future efforts.

JORDAN

Jordan would be selected as the test country. This selection is based on the following criteria: (1) some activities are currently being undertaken, and (2) information about these activities is available.

Jordan also presents some unique challenges to AT development because, in order for technology to be appropriate in Jordan, Jordanians indicate, it must take into account a manpower shortage, rather than an abundance. AT in Jordan may look quite different from AT efforts elsewhere.

Some elements of networking already present in Jordan include:

- Presence of leader agency - Royal Scientific Society
- Government support for AT activities
- Network support functions including documentation centers, translation capabilities, document simplification centers, etc.

At present, however, there is little AT activity.

Action Plan

- Organizations and individuals in Jordan would be encouraged to continue and expand their informal networking activities. The Royal Scientific Society, mentioned by some organizations as a potential national leader agency, would be supported in a program to expand its documentation center and communications capability.
- Organizations such as CARE/MEDICO would be supported in expanding their grass roots activities. These activities are expected to lead to greater demands for networking.
- In the second year, national networking would begin. If feasible, a founding conference would be held at the end of the second year. At this time, activities would focus on making the necessary contacts with established organizations and other users of AT.

Estimated Costs

First Year

Network Support/Small grants	\$50,000
------------------------------	----------

Second Year

Organizing costs	75,000
------------------	--------

Total - Initial Phase	\$125,000
-----------------------	-----------

NEAR EAST NETWORKING

Suggestions for third year activities in the Near East can only be assessed after the initial networking has been evaluated, and a further plan of action defined.

PROPOSED ACTION PLAN: CENTRAL SERVICE UNIT

Of all of the components within this network, none raises as much controversy as that of a central service unit. AT practitioners express dichotomous views on the necessity of such a mechanism; some are extremely opposed to the formation of such a unit, others are so tired and frustrated by innumerable searches for relevant AT data that they would like one agency

to collect such data and offer access to others.

Because of these widely and wildly divergent views, the central service unit's formation must be approached with a maximum of sensitivity and direction.

Action Plan

- In the first year of this effort, no actions should be undertaken.
- At the beginning of the second year, a conference should be organized, bringing together national and regional AT networks, other networks, AT users, and interested parties. These persons would develop a plan of action for initiating the central service unit's activities, taking into account existing efforts and developing those activities that have not been initiated.
- As a result of the plan of action developed by network participants, the necessary linkages to AT networks, other networks, and data bases would be determined and initiated.

Estimated Costs

First Year

No activities \$ 0

Second Year

Organizing costs 40,000
Linkage costs 150,000

Total - Initial Phase \$190,000

PROPOSED ACTION PLAN: DATA BASES

As part of the initial period, VITA also proposes to develop a small grants program with major data bases, to determine the extent of their holdings on appropriate technologies. This type of activity would involve the data bases extrapolating relevant AT information from their data files and compiling this information into directories for use by the Central Service Unit. As it is presently unclear as to the extent these data bases hold AT information, such a pro-

gram would establish the potentials of the use of data bases in AT development activities. Also, this program would reduce the costs of on-line searching by the Central Service Unit, as the holdings would have been identified.

Examples of data bases which hold AT information, but to what extent is still not known, include the following: U.S. Department of Agriculture (AGRICOLA), International Technical Center of Rubbers and Plastics, Environmental Information Center, Inc., U.S. Department of the Interior-Technology and Information Transfer-Water Research and Technology, International Development Research Center (IDRC), Forest Products Research (AIDS), Solar Energy Information Service (SEIS), and Georgia Institute of Technology-Office of International Programs.

According to past searches of data bases, the estimated cost for such a project would be \$10,000 per data base.

Action Plan

- VITA suggests that during the first year, 3 of these searches be initiated. Output from these searches would be directories of the AT holdings of the selected data bases.
- During the second year, assuming a positive result from the first year's activities, 5 more searches would be initiated, with the output being directories of these data bases. Additionally, the data bases surveyed previously would update their holdings.

Estimated Costs

First year

3 searches @ \$10,000 per search	\$30,000
----------------------------------	----------

Second year

5 searches @ \$10,000 per search	50,000
3 Updates @ \$2,000 per search	6,000

Total - Initial Period	\$ 36,000
------------------------	-----------

EFFECT OF ACTION PLANS OF NEIGHBORING COUNTRIES

While it is understood that due to certain political difficulties, activity in one country would not lead to activity in neighboring countries, often a development in one country leads to similar activities in neighboring areas. Practitioners in one area that work with the practitioners in another learn of a particular success and begin to disseminate the idea among their colleagues, for local adaptation and use. VITA speculates that the development of the networks proposed in the Action Plan(s) would lead to similar activities in contiguous countries. Therefore, at the end of the contract period, USAID might have participated not only in the development of the networks outlined in the Action Plan(s); but perhaps twice the number of activities would have been initiated because of the catalytic effect of these Action Plan(s).

SUMMARY OF PROPOSED ACTION PLANS

These action plans maximize the number of implementation options while responding to the expressed desires of AT participants. A variety of implementation strategies have been proposed: (1) national networking, (2) regional networking, (3) national and regional networking, (4) encouraging existing activities, and (5) developing the central service unit. The total cost for such an effort is estimated to be \$3,561,000 (see budget p. 118). From these implementation models, a wealth of experience will be gained as to which models work best and under what conditions.

ESTIMATED TECHNICAL ASSISTANCE BUDGET (PER NETWORK)

(Based on U.S. Costs)

I. Documentation Center Development

Staff - 10 days training
 10 days evaluation and
 troubleshooting

Total 20 on-site days @ \$300/day*	\$ 6,000
Per diem @\$50/day	1,000
Travel - two trips @\$1,700/trip	<u>3,400</u>

On-site Expenses	\$ 10,400
------------------	-----------

Home Office Preparation	1,000
-------------------------	-------

Documentation--1,000 documents on AT plus mailing	<u>10,000</u>
--	---------------

Total Documentation Center Development	\$ 21,400
--	-----------

II. Skills Bank Development

Staff - 10 days training
 5 days evaluation and
 troubleshooting

Total 15 on-site days @ \$300/day	\$ 4,500
Per diem @\$50/day	750
Travel - two trips	3,400

Home Office Preparation	<u>1,000</u>
-------------------------	--------------

Total Skills Bank Development	\$ 9,650
-------------------------------	----------

* includes \$180 per diem plus indirect cost rate.

III. Field Staff Training

Needs Assessment

Staff - 10 days training 10 days evaluation and problem-solving	
Total 20 days on-site	\$ 6,000
Per diems @ \$50/day	1,000
Travel - 2 people/2 trips	6,800
Home Office Preparation	1,000

Documentation Training

Staff - 5 days training 5 days evaluation and troubleshooting	
Total 10 days @\$300/day	3,000
Per Diems @\$50	500
Travel - 2 trips	3,400
Home Office Preparation	<u>500</u>

Total Field Staff Training

IV. Project Development/Management Support

Technical Staff 60 days @\$300/day	18,000
Per diems @\$50/day	3,000
Travel - 2 trips	3,400
Program Staff 30 days @\$300/day	9,000
Per diems @50/day	1,500
Travel-2 trips	3,400
Home Office Preparation	<u>5,000</u>

Total PD/MS

V. Publication Adaptation Development

Staff - 10 days training
10 days evaluation

Total 20 days @\$300/day	\$ 6,000
Per Diems @\$50/day	1,000
Travel - two trips	3,400

Home Office Preparation	<u>1,000</u>
-------------------------	--------------

Total Publication Adaptation Development	<u>\$ 11,400</u>
--	------------------

Total Technical Assistance Budget	\$102,950
-----------------------------------	-----------

SAMPLE BUDGET FOR LAUNCHING A NATIONAL NETWORK

* 1 Networker	\$20,000
* 1 Secretary	<u>12,000</u>
	\$32,000
Fringe Benefits @ 20%	<u>6,000</u>
Total Personnel Costs	\$38,000
* Support Services (office equipment, telephones, telex/telecopier, etc.)	10,000
* Travel	5,000
* Miscellaneous	2,000
Conference Expenses (travel, per diem, rental, etc.)	<u>20,000</u>
Estimated Total	\$75,000

*recurring costs

SAMPLE BUDGET FOR DEVELOPING A REGIONAL COORDINATING UNIT

* 1 Networker	\$20,000
* 1 Secretary	<u>12,000</u>
	\$32,000
Fringe Benefits @ 20%	<u>6,000</u>
Total Personnel Costs	38,000
* Support Services (office equipment, telephone, telex/telecopier, etc.)	15,000
* Travel	10,000
* Miscellaneous	2,000
Conference Expenses (travel, per diem, rentals, etc.)	<u>30,000</u>
Estimated Total	\$95,000

*recurring costs

SAMPLE BUDGET FOR DEVELOPING THE CENTRAL SERVICE UNIT

* 1 Networker/Director	\$ 30,000
* 1 Computer Specialist	25,000
* 1 Administrative Assistant	15,000
* 1 Secretary	<u>12,000</u>
	\$ 82,000
* Fringe benefits @ 20%	<u>16,000</u>
* Total Personnel Costs	\$ 98,000
* Travel	10,000
* Office Support (supplies, furniture, telephone expenses)	20,000
* Miscellaneous	<u>20,000</u>
Total Cost	\$148,000

*recurring costs

SAMPLE CATALYST BUDGET

Project Director	\$ 30,000
Project Manager	25,000
Administrative Assistant	18,000
Bi-lingual Secretary	15,000
Sub-total	\$ 88,000
Fringe benefits @ 20%	16,000
Indirect costs @ 25%	20,000
Total Staff Costs	\$124,000
Support Services (consulting, office supplies and furniture, telephone, mailings, photocopying, etc.)	10,000
Travel	10,000
TOTAL	\$144,000

ACTION PLAN BUDGET

	<u>1st year</u>	<u>2nd year</u>	<u>TOTAL</u>
<u>ASIA</u>			
Indonesia	\$ 200,000	\$ 155,000	\$ 355,000
Philippines	75,000	255,000	330,000
Sri Lanka	65,000	75,000	40,000
<u>AFRICA</u>			
Botswana	130,000	205,000	335,000
Kenya	75,000	255,000	330,000
Senegal	145,000	165,000	310,000
<u>LATIN AMERICA</u>			
Caribbean	95,000	265,000	360,000
Central America	50,000	250,000	300,000
Andean	60,000	144,000	204,000
Brazil/Southern Cone	60,000	144,000	204,000
<u>NEAR EAST</u>			
Jordan	60,000	75,000	135,000
<u>CENTRAL SERVICE UNIT</u>			
	0	190,000	190,000
Catalyst Agency	144,000	144,000	238,000
Data Bases	30,000	50,000	30,000
TOTALS	\$1,189,000	\$2,372,000	\$3,561,000

SECTION 9: NETWORK MANAGEMENT EVALUATION PARAMETERS

NETWORK MANAGEMENT EVALUATION PARAMETERS

The Formative Evaluation process is suggested to measure the progress of network development. This process begins with the development of measurable standards, leading to data collection, analysis, and program or standards revision. This process fits in very well with AID Log-Frame methodology, with clearly defined inputs and outputs. For this project, VITA suggests three focus areas be used to measure system development: (1) input, (2) process, and (3) output of the system. This process would be performed and used by the networks themselves with technical assistance from USAID and the catalyst agency.

Formative Evaluation

In the Formative Evaluation process, one of the most important steps is the initial one, the definition of the issue to be studied and the development of a measurable standard upon which to base later evaluation. A standard such as "Use of AT in the field", is not very useful, as quantifiable definitions and descriptors are not developed. Does "in the field" include cities? towns? suburbs? If one person uses an appropriate technology, does this qualify as "use"? This standard is too ambiguous to be of much use in data collection and analysis. A more useful standard might be "Sale of 700 jab planters to farmers in the first year of production", which has the necessary measurable ingredients: (Mode of transfer: sale, Number sold: 700, Target group: farmers, time frame: one Year).

Evaluation Parameters

The input evaluation parameters should be those which measure the extent to which the network is reaching those organizations and individuals who want to use appropriate technologies to improve their, or their communities' conditions. The extent to which the network is reaching the target population can partially be determined by the number of requests for assistance that are received from AT users not in the network. (The standard for this evaluation must be carefully designed to take into account regular clientele, as some AT users would contact network members even if there was no network). The extent to which the network is serving its members can also be partially determined by the number of intra-network contacts made by network members (with the same caveat concerning normal business clientele). Applied against measurable standards, these simple parameters would provide a first cycle evaluation result, which could lead to more in-depth analysis of network inputs.

The process measures used to evaluate the network can be based on time, to answer a request for assistance from both in and out-of-network practitioners, and to develop a project, from the time it is received until the network role is completed. Process can focus on turnaround times to process a request for assistance, from the initial acknowledgment to the satisfaction of the request. The time to develop a project can also be evaluated by the use of such mechanisms as implementation schedules and PERT charts, which indicate when each part of the development process, theoretically, must be completed. The actual progress can be plotted next to these projections with the areas behind schedule being clearly illustrated.

The networks can also be evaluated by their output. At each level of activity, specific outputs should be developed. For instance, at the national level, directories of network participants, and activities should be compiled, newsletters and publications developed and distributed, and projects planned and implemented. The scheduling of these outputs, their quantity (and to a lesser extent their quality), number distributed, and the actual use of appropriate technologies by a target population can be used to measure the network outputs.

Summary

The use of such evaluation process will lead the network managers to the meaningful application of resources, and avoid the often cumbersome and laborous task of collecting as much data as possible, only to find that the data doesn't address the necessary issues. By establishing simple evaluation procedures, networks could have a mechanism that is understood and accepted by all, leading to the most meaningful performance modifications.

ADUENDUM

ADDENDUM: PARTICIPANT EVALUATION OF SURVEY RESULTS

As part of this survey effort, VITA documented its general findings and recommendations, and mailed these results to survey respondents for their review and comments. The Findings and Recommendations report, as well as the evaluation form survey respondents were asked to complete, are included at the end of this addendum.

As of 3/20/80, 117 (28%) of these evaluation forms have been returned to VITA. The results of this evaluation shows support for the network concept, especially from the lesser developed countries (LDC's). The lesser developed countries indicated a desire for explicit structure; those respondents from the more developed countries were not as enthusiastic about such a structure, but generally favored the concept. (See attached results p. 124).

Respondents from the LDC's were most enthusiastic about the idea of national networking, establishing a focal point within that structure, and having an international exchange of resources. Although support for these regional and central service units was indicated, LDC respondents were more hesitant about the role of these units, perhaps reflecting a fear of domination from above.

Respondents from the more developed countries (MDC's) indicated support for national networking, establishment of a focal point, and international exchange, and to a lesser degree, support concerning regional and central service units, the use of data-bases for technical backstopping, and the electronic communications system. In general, more developed country respondents indicated a desire for less structure than their LDC counterparts.

From these results, VITA concludes that the networking concept would be favorably received in the LDC's. Furthermore, the establishment of a network structure, including a focal point, would also be well-received in the LDC's. Once these national networks are established, the regional and central service units would be established to provide support to these national level activities: As the service aspect of the regional and central units is established, they too will be likely well-received by network participants.

FINDINGS AND RECOMMENDATIONS

<u>FINDING</u>	Strongly agree		Agree		Neutral		Disagree		Strongly Disagree	
	MDC	LDC	MDC	LDC	MDC	LDC	MDC	LDC		
1. Desired Resources	38%	44%	53%	55%	6%	0%	3%	0%	0%	
2. Informal Networking	25	15	62	75	12	10	0	0	0	
3. Problems	28	44	57	46	8	10	5	0	0	
4. Coordination	24	38	48	47	15	9	12	4	0	
5. Conditions	29	33	64	62	3	0	3	5	0	
6. National Infrastructures	12	45	69	50	9	5	6	0	3	
<u>RECOMMENDATION</u>										
1. National Networking	28%	66%	51%	29%	11%	4%	5%	0%	2%	
2. Focal Point	15	53	54	34	15	11	12	0	3	
3. Access to Resources	21	56	60	39	18	4	0	0	0	
4. International Exchange	16	55	63	40	16	5	0	0	2	
4a. Regional	3	28	58	57	35	9	0	4	3	
4b. Central	8	31	50	31	20	31	14	7	6	
5. Backstop	21	23	51	57	19	14	6	4	3	
6. Telex/Telecopier	11	36	40	31	25	31	17	0	5	

APPENDIX 1: SURVEY RESULTS: TABLES

Regional Totals

CATEGORIES	TRANSFER AGENT	END-USER	FACIL-ITATOR	R & D INSTITUTES	SPONSOR
SPECIALIZED TECHNICAL EXPERTISE	96	46	108	61	30
PUBLICATIONS	100	43	108	66	29
TECHNICAL DOCUMENTS	88	37	86	57	21
REPORTS FROM OTHER ORGANIZATIONS	97	41	104	62	29
DEMOGRAPHIC/STATISTICAL DATA	72	30	81	47	26
GEOGRAPHIC DATA	59	27	66	39	22
INFORMATION ON FUNDING SOURCES	60	25	79	40	25
ECONOMIC/MARKETING STUDIES	54	23	65	35	23
AUDIO/VISUAL AIDS	53	23	66	37	14
OTHER	12	5	10	4	4

Asia

CATEGORIES	TRANSFER AGENT	END-USER	FACIL-ITATOR	R & D INSTITUTES	SPONSOR
SPECIALIZED TECHNICAL EXPERTISE	27	4	22	18	4
PUBLICATIONS	33	7	27	19	4
TECHNICAL DOCUMENTS	26	6	20	16	4
REPORTS FROM OTHER ORGANIZATIONS	32	7	26	17	4
DEMOGRAPHIC/STATISTICAL DATA	16	3	16	10	4
GEOGRAPHIC DATA	12	3	13	8	4
INFORMATION ON FUNDING SOURCES	16	2	15	9	3
ECONOMIC/MARKETING STUDIES	13	3	9	5	2
AUDIO/VISUAL AIDS	16	5	15	12	4
OTHER	3	1	2	1	1

TABLE 1. IN-HOUSE RESOURCES

Table 1: In-House Resources (continued)

Africa

CATEGORIES	TRANSFER AGENT	END-USER	FACILITATOR	R & D INSTITUTES	SPONSOR
SPECIALIZED TECHNICAL EXPERTISE	28	19	32	14	7
PUBLICATIONS	24	19	30	18	7
TECHNICAL DOCUMENTS	23	19	27	13	6
REPORTS FROM OTHER ORGANIZATIONS	23	18	30	15	8
DEMOGRAPHIC/STATISTICAL DATA	21	17	29	13	7
GEOGRAPHIC DATA	18	17	23	11	6
INFORMATION ON FUNDING SOURCES	17	11	22	9	7
ECONOMIC/MARKETING STUDIES	14	12	19	10	6
AUDIO/VISUAL AIDS	11	5	15	5	1
OTHER	2	0	1	0	0

Latin America

CATEGORIES	TRANSFER AGENT	END-USER	FACILITATOR	R & D INSTITUTES	SPONSOR
SPECIALIZED TECHNICAL EXPERTISE	24	13	32	18	11
PUBLICATIONS	24	11	31	18	13
TECHNICAL DOCUMENTS	22	8	23	18	11
REPORTS FROM OTHER ORGANIZATIONS	24	10	28	19	13
DEMOGRAPHIC/STATISTICAL DATA	21	7	22	16	11
GEOGRAPHIC DATA	15	4	17	12	8
INFORMATION ON FUNDING SOURCES	16	6	26	14	11
ECONOMIC/MARKETING STUDIES	16	6	20	12	11
AUDIO/VISUAL AIDS	14	8	22	12	11
OTHER	3	1	4	2	0

Table 1: In-house Resources (continued)

Near East

CATEGORIES	TRANSFER AGENT	END-USER	FACILITATOR	R & D INSTITUTES	SPC
SPECIALIZED TECHNICAL EXPERTISE	0	1	7	1	
PUBLICATIONS	0	1	7	1	
TECHNICAL DOCUMENTS	0	0	3	1	
REPORTS FROM OTHER ORGANIZATIONS	0	1	5	1	
DEMOGRAPHIC/STATISTICAL DATA	0	1	6	1	
GEOGRAPHIC DATA	0	1	5	1	
INFORMATION ON FUNDING SOURCES	0	1	3	0	
ECONOMIC/MARKETING STUDIES	0	0	4	0	
AUDIO/VISUAL AIDS	0	0	3	0	
OTHER	0	0	0	0	

Europe, North America and Japan

CATEGORIES	TRANSFER AGENT	END-USER	FACILITATOR	R & D INSTITUTES	SPC
SPECIALIZED TECHNICAL EXPERTISE	17	6	15	10	
PUBLICATIONS	19	5	13	10	
TECHNICAL DOCUMENTS	17	1	13	9	
REPORTS FROM OTHER ORGANIZATIONS	18	5	15	10	
DEMOGRAPHIC/STATISTICAL DATA	14	2	8	7	
GEOGRAPHIC DATA	14	2	8	7	
INFORMATION ON FUNDING SOURCES	11	5	13	8	
ECONOMIC/MARKETING STUDIES	11	2	7	8	
AUDIO/VISUAL AIDS	12	5	1	8	
OTHER	4	3	3	1	

Regional Totals

CATEGORIES	TRANSFER AGENT	END-USER	FACILITATOR	R & D INSTITUTES	SPONSC
SPECIALIZED TECHNICAL EXPERTISE	91	44	104	52	27
PUBLICATIONS	49	106	66	27	101
TECHNICAL DOCUMENTS	101	45	104	58	24
REPORTS FROM OTHER ORGANIZATIONS	104	46	107	61	27
DEMOGRAPHIC/STATISTICAL DATA	78	35	91	48	24
GEOGRAPHIC DATA	71	31	82	47	23
INFORMATION ON FUNDING SOURCES	65	32	76	41	18
ECONOMIC/MARKETING STUDIES	63	31	68	38	23
AUDIO/VISUAL AIDS	46	16	46	29	13
OTHER	9	4	10	2	2

Asia

CATEGORIES	TRANSFER AGENT	END-USER	FACILITATOR	R & D INSTITUTES	SPONSO
SPECIALIZED TECHNICAL EXPERTISE	28	10	24	15	3
PUBLICATIONS	9	26	18	3	34
TECHNICAL DOCUMENTS	34	9	25	18	3
REPORTS FROM OTHER ORGANIZATIONS	30	9	25	16	3
DEMOGRAPHIC/STATISTICAL DATA	19	4	16	11	2
GEOGRAPHIC DATA	17	3	16	11	2
INFORMATION ON FUNDING SOURCES	17	4	14	9	3
ECONOMIC/MARKETING STUDIES	18	5	15	10	2
AUDIO/VISUAL AIDS	14	2	12	9	1
OTHER	2	0	3	0	0

TABLE 2: RESOURCES ACQUIRED FROM EXTERNAL SOURCES

Table 2: Resources Acquired from External Sources (continued)

Africa

CATEGORIES	TRANSFER AGENT	END-USER	FACILITATOR	R & D INSTITUTES	SPONS
SPECIALIZED TECHNICAL EXPERTISE	26	19	32	13	
PUBLICATIONS	21	35	15	7	
TECHNICAL DOCUMENTS	28	18	32	15	
REPORTS FROM OTHER ORGANIZATIONS	32	18	34	16	
DEMOGRAPHIC/STATISTICAL DATA	25	15	32	13	
GEOGRAPHIC DATA	22	14	26	12	
INFORMATION ON FUNDING SOURCES	19	13	23	11	
ECONOMIC/MARKETING STUDIES	15	13	20	8	
AUDIO/VISUAL AIDS	11	3	15	4	
OTHER	2	1	4	1	

Latin America

CATEGORIES	TRANSFER AGENT	END-USER	FACILITATOR	R & D INSTITUTES	SPONS
SPECIALIZED TECHNICAL EXPERTISE	22	10	29	16	1
PUBLICATIONS	12	29	17	12	2
TECHNICAL DOCUMENTS	23	12	29	16	1
REPORTS FROM OTHER ORGANIZATIONS	25	13	29	18	1
DEMOGRAPHIC/STATISTICAL DATA	21	10	26	15	1
GEOGRAPHIC DATA	19	9	25	15	1
INFORMATION ON FUNDING SOURCES	16	10	24	13	1
ECONOMIC/MARKETING STUDIES	19	10	21	14	1
AUDIO/VISUAL AIDS	12	6	19	9	
OTHER	4	2	3	1	

Table 2: Resources Acquired from External Sources

Near East

CATEGORIES	TRANSFER AGENT	END-USER	FACIL-ITATOR	R & D INSTITUTES	SPONSOR
SPECIALIZED TECHNICAL EXPERTISE	0	1	6	1	0
PUBLICATIONS	0	1	7	1	0
TECHNICAL DOCUMENTS	0	1	6	1	0
REPORTS FROM OTHER ORGANIZATIONS	0	1	5	1	0
DEMOGRAPHIC/STATISTICAL DATA	0	1	6	1	0
GEOGRAPHIC DATA	0	1	5	1	0
INFORMATION ON FUNDING SOURCES	0	1	3	0	0
ECONOMIC/MARKETING STUDIES	0	0	1	0	0
AUDIO/VISUAL AIDS	0	0	2	0	0
OTHER	0	0	0	0	0

Europe, North America, and Japan

CATEGORIES	TRANSFER AGENT	END-USER	FACIL-ITATOR	R & D INSTITUTES	SPONSOR
SPECIALIZED TECHNICAL EXPERTISE	15	4	13	7	4
PUBLICATIONS	7	15	9	4	16
TECHNICAL DOCUMENTS	16	5	12	8	4
REPORTS FROM OTHER ORGANIZATIONS	17	6	14	10	1
DEMOGRAPHIC/STATISTICAL DATA	13	5	11	8	3
GEOGRAPHIC DATA	13	4	10	8	3
INFORMATION ON FUNDING SOURCES	13	4	12	8	3
ECONOMIC/MARKETING STUDIES	11	3	11	6	1
AUDIO/VISUAL AIDS	9	5	8	7	3
OTHER	1	1	0	0	0

Regional Totals

CATEGORIES	TRANSFER AGENT	END-USER	FACIL-ITATOR	R & D INSTITUTES	SPONSOR
LOCAL/MULTI-STATE	38	15	34	20	
NATIONAL	66	29	75	39	1
REGIONAL	43	16	45	25	1
GLOBAL	68	33	31	31	1
ORGANIZATIONS WITH SAME PURPOSE	57	17	62	29	1

Asia

CATEGORIES	TRANSFER AGENT	END-USER	FACIL-ITATOR	R & D INSTITUTES	SPONSOR
LOCAL/MULTI-STATE	15	3	12	6	0
NATIONAL	23	5	19	13	1
REGIONAL	13	3	10	8	0
GLOBAL	17	4	14	11	3
ORGANIZATIONS WITH SAME PURPOSE	19	4	18	9	3

Africa

CATEGORIES	TRANSFER AGENT	END-USER	FACIL-ITATOR	R & D INSTITUTES	SPONSOR
LOCAL/MULTI-STATE	5	4	4	3	0
NATIONAL	15	10	17	9	0
REGIONAL	14	9	13	6	1
GLOBAL	27	19	33	15	3
ORGANIZATIONS WITH SAME PURPOSE	14	6	15	7	0

TABLE 3: SOURCES OF EXTERNAL RESOURCES

Table 3: Sources of External Resources (continued)

Latin America

CATEGORIES	TRANSFER AGENT	END-USER	FACIL-ITATOR	R & D INSTITUTES	SPONS
LOCAL/MULTI-STATE	9	5	10	8	
NATIONAL	17	8	23	13	
REGIONAL	9	2	11	6	
GLOBAL	15	7	18	11	
ORGANIZATIONS WITH SAME PURPOSE	11	4	12	6	

Near East

CATEGORIES	TRANSFER AGENT	END-USER	FACIL-ITATOR	R & D INSTITUTES	SP	ES
LOCAL/MULTI-STATE	0	0	1	0		
NATIONAL	0	1	5	0		
REGIONAL	0	0	1	1		
GLOBAL	0	1	7	1		
ORGANIZATIONS WITH SAME PURPOSE	0	0	6	1		

Europe, North America, and Japan

CATEGORIES	TRANSFER AGENT	END-USER	FACIL-ITATOR	R & D INSTITUTES	SP	ES
LOCAL/MULTI-STATE	9	3	7	4		
NATIONAL	11	5	11	1		
REGIONAL	7	2	2	2		
GLOBAL	9	2	2	1		
ORGANIZATIONS WITH SAME PURPOSE	13	3	11	3		

CATEGORIES	TRANSFER AGENT	END-USER	FACIL-ITATOR	R & D INSTITUTES	SPON
CONTACT IS INFREQUENT	44	27	51	30	
INFORMATION TAKES TOO LONG TO GET	64	31	61	35	
DIFFICULT TO IDENTIFY WHO HAS WHAT	67	32	82	23	
COST FOR INFORMATION IS TOO HIGH	39	17	37	19	
INFORMATION RECEIVED IS TOO COMPLEX	16	8	18	7	
INFORMATION RECEIVED ISN'T TRANSLATED	28	12	15	18	
TOO MUCH INFORMATION	17	5	22	8	
INFORMATION ISN'T CLEARLY EXPLAINED	12	7	17	10	
INFORMATION IS PROPRIETARY	18	9	25	13	
INFORMATION IS NOT ACCURATE	16	5	22	12	
INFORMATION IS NOT TESTED	37	20	41	23	
OTHER	27	13	28	13	

Asia

CATEGORIES	TRANSFER AGENT	END-USER	FACIL-ITATOR	R & D INSTITUTES	SPONSOR
CONTACT IS INFREQUENT	10	4	10	11	
INFORMATION TAKES TOO LONG TO GET	18	5	11	6	
DIFFICULT TO IDENTIFY WHO HAS WHAT	20	5	17	9	
COST FOR INFORMATION IS TOO HIGH	14	4	11	4	
INFORMATION RECEIVED IS TOO COMPLEX	5	2	5	3	
INFORMATION RECEIVED ISN'T TRANSLATED	7	0	4	2	
TOO MUCH INFORMATION	3	1	3	3	
INFORMATION ISN'T CLEARLY EXPLAINED	5	2	4	3	
INFORMATION IS PROPRIETARY	6	1	6	6	
INFORMATION IS NOT ACCURATE	2	0	3	1	
INFORMATION IS NOT TESTED	10	3	9	7	
OTHER	3	0	4	2	

TABLE 1: PROBLEMS

Table 4: Problems (continued)

Africa

CATEGORIES	TRANSFER AGENT	END-USER	FACILITATOR	R & D INSTITUTES	SPC	SC
CONTACT IS INFREQUENT	21	12	20	6		1
INFORMATION TAKES TOO LONG TO GET	27	15	26	13		4
DIFFICULT TO IDENTIFY WHO HAS WHAT	20	16	27	10		5
COST FOR INFORMATION IS TOO HIGH	9	5	10	5		0
INFORMATION RECEIVED IS TOO COMPLEX	4	1	4	0		0
INFORMATION RECEIVED ISN'T TRANSLATED	6	4	4	5		0
TOO MUCH INFORMATION	9	1	7	1		0
INFORMATION ISN'T CLEARLY EXPLAINED	0	0	0	0		0
INFORMATION IS PROPRIETARY	2	3	5	0		0
INFORMATION IS NOT ACCURATE	3	3	5	3		0
INFORMATION IS NOT TESTED	14	10	15	5		2
OTHER	14	10	13	5		3

Latin America

CATEGORIES	TRANSFER AGENT	END-USER	FACILITATOR	R & D INSTITUTES	SPONSOR
CONTACT IS INFREQUENT	10	8	13	10	
INFORMATION TAKES TOO LONG TO GET	16	8	15	14	
DIFFICULT TO IDENTIFY WHO HAS WHAT	17	8	21	13	
COST FOR INFORMATION IS TOO HIGH	14	7	12	8	
INFORMATION RECEIVED IS TOO COMPLEX	4	4	6	3	
INFORMATION RECEIVED ISN'T TRANSLATED	13	7	0	10	
TOO MUCH INFORMATION	0	1	5	3	
INFORMATION ISN'T CLEARLY EXPLAINED	3	5	8	6	
INFORMATION IS PROPRIETARY	7	5	9	5	
INFORMATION IS NOT ACCURATE	4	2	7	6	
INFORMATION IS NOT TESTED	5	3	7	6	
OTHER	5	2	1	1	

Table 4: Problems (continued)

Near East

CATEGORIES	TRANSFER AGENT	END-USER	FACILITATOR	R & D INSTITUTES	SPONSOR
CONTACT IS INFREQUENT	1	2	6	1	0
INFORMATION TAKES TOO LONG TO GET	1	2	7	1	0
DIFFICULT TO IDENTIFY WHO HAS WHAT	1	2	8	0	0
COST FOR INFORMATION IS TOO HIGH	0	0	2	1	0
INFORMATION RECEIVED IS TOO COMPLEX	0	0	0	0	0
INFORMATION RECEIVED ISN'T TRANSLATED	1	2	4	0	0
TOO MUCH INFORMATION	0	1	2	0	0
INFORMATION ISN'T CLEARLY EXPLAINED	0	0	1	0	0
INFORMATION IS PROPRIETARY	0	0	1	0	0
INFORMATION IS NOT ACCURATE	0	0	0	0	0
INFORMATION IS NOT TESTED	0	1	3	0	0
OTHER	1	1	4	1	0

Europe, North America, and Japan

CATEGORIES	TRANSFER AGENT	END-USER	FACILITATOR	R & D INSTITUTES	SPONSOR
CONTACT IS INFREQUENT	2	1	2	2	3
INFORMATION TAKES TOO LONG TO GET	2	1	2	1	1
DIFFICULT TO IDENTIFY WHO HAS WHAT	0	3	9	4	2
COST FOR INFORMATION IS TOO HIGH	2	1	2	1	1
INFORMATION RECEIVED IS TOO COMPLEX	3	1	3	1	1
INFORMATION RECEIVED ISN'T TRANSLATED	1	0	3	1	0
TOO MUCH INFORMATION	5	1	5	1	1
INFORMATION ISN'T CLEARLY EXPLAINED	4	0	4	1	1
INFORMATION IS PROPRIETARY	3	0	4	2	1
INFORMATION IS NOT ACCURATE	7	0	7	2	1
INFORMATION IS NOT TESTED	8	3	7	5	1
OTHER	4	0	3	1	2

Regional Totals

CATEGORIES	TRANSFER AGENT	END-USER	FACIL-ITATOR	R & D INSTITUTES	SPONSOR
TECHNICAL EXPERTS FOR ADVICE & TRAINING	54	36	82	35	1
PUBLICATIONS	86	38	95	45	20
UP-TO-DATE TECHNICAL DOCUMENTS	87	37	96	48	1
KNOWING EXPERIENCES OF SIMILAR PROJECTS	94	42	79	44	26
KNOWLEDGE OF OTHER FUNDING AGENCIES	78	33	77	40	1
DEMOGRAPHIC/STATISTICAL PROJECTIONS	26	15	32	18	8
GEOGRAPHIC DATA	25	8	29	13	1
MARKETING ASSISTANCE	32	19	37	18	12
OTHER	25	10	25	12	5

Asia

CATEGORIES	TRANSFER AGENT	END-USER	FACIL-ITATOR	R & D INSTITUTES	SPONSOR
TECHNICAL EXPERTS FOR ADVICE & TRAINING	18	6	15	8	1
PUBLICATIONS	28	6	22	13	1
UP-TO-DATE TECHNICAL DOCUMENTS	24	5	18	12	2
KNOWING EXPERIENCES OF SIMILAR PROJECTS	29	8	21	11	1
KNOWLEDGE OF OTHER FUNDING AGENCIES	24	6	18	10	1
DEMOGRAPHIC/STATISTICAL PROJECTIONS	12	4	9	5	1
GEOGRAPHIC DATA	9	2	8	4	0
MARKETING ASSISTANCE	12	4	8	6	1
OTHER	5	2	7	4	1

TABLE 6: RESOURCE NEEDS AND WANTS

Table 5: Resource Needs and Wants

Africa

CATEGORIES	TRANSFER AGENT	END-USER	FACIL-ITATOR	R & D INSTITUTES	SPONS
TECHNICAL EXPERTS FOR ADVICE & TRAINING	25	15	23	10	3
PUBLICATIONS	28	16	31	13	4
UP-TO-DATE TECHNICAL DOCUMENTS	31	19	35	18	6
KNOWING EXPERIENCES OF SIMILAR PROJECTS	28	17	32	11	7
KNOWLEDGE OF OTHER FUNDING AGENCIES	21	10	18	7	1
DEMOGRAPHIC/STATISTICAL PROJECTIONS	8	4	7	4	1
GEOGRAPHIC DATA	6	2	6	3	0
MARKETING ASSISTANCE	6	5	6	3	0
OTHER	10	5	8	3	1

Latin America

CATEGORIES	TRANSFER AGENT	END-USER	FACIL-ITATOR	R & D INSTITUTES	SPONSOR
TECHNICAL EXPERTS FOR ADVICE & TRAINING	20	9	25	13	12
PUBLICATIONS	17	10	24	13	10
UP-TO-DATE TECHNICAL DOCUMENTS	19	8	24	13	10
KNOWING EXPERIENCES OF SIMILAR PROJECTS	22	11	30	15	13
KNOWLEDGE OF OTHER FUNDING AGENCIES	18	12	26	14	10
DEMOGRAPHIC/STATISTICAL PROJECTIONS	1	4	12	5	1
GEOGRAPHIC DATA	4	2	3	2	3
MARKETING ASSISTANCE	10	8	16	6	3
OTHER	8	2	8	5	2

Table 5: Resource Needs and Wants

Near East

CATEGORIES	TRANSFER AGENT	END-USER	FACILITATOR	R & D INSTITUTES	SPONSOR
TECHNICAL EXPERTS FOR ADVICE & TRAINING	1	2	9	1	0
PUBLICATIONS	1	1	6	0	0
UP-TO-DATE TECHNICAL DOCUMENTS	1	2	9	1	1
KNOWING EXPERIENCES OF SIMILAR PROJECTS	0	1	7	1	0
KNOWLEDGE OF OTHER FUNDING AGENCIES	0	0	0	0	1
DEMOGRAPHIC/STATISTICAL PROJECTIONS	0	0	4	0	0
GEOGRAPHIC DATA	0	0	3	0	1
MARKETING ASSISTANCE	0	0	1	0	0
OTHER	0	0	3	1	1

Europe, North America and Japan

CATEGORIES	TRANSFER AGENT	END-USER	FACILITATOR	R & D INSTITUTES	SPONSOR
TECHNICAL EXPERTS FOR ADVICE & TRAINING	9	4	10	3	3
PUBLICATIONS	12	5	12	6	4
UP-TO-DATE TECHNICAL DOCUMENTS	12	3	9	6	3
KNOWING EXPERIENCES OF SIMILAR PROJECTS	15	5	13	6	4
KNOWLEDGE OF OTHER FUNDING AGENCIES	15	5	12	8	5
DEMOGRAPHIC/STATISTICAL PROJECTIONS	5	2	4	3	2
GEOGRAPHIC DATA	6	2	3	4	2
MARKETING ASSISTANCE	4	2	4	3	2
OTHER	2	1	1	0	1

Regional Totals

CATEGORIES	TRANSFER AGENT	END-USER	FACIL-ITATOR	R & D INSTITUTES	SPONSO
CORRESPONDENCE	7	6	8	4	1
SIMPLE MANUALS	17	7	19	5	3
ILLUSTRATED BOOKS	4	3	11	1	1
ON-SITE INSTRUCTION	16	9	21	8	5
OTHER	27	11	25	16	4

Asia

CATEGORIES	TRANSFER AGENT	END-USER	FACIL-ITATOR	R & D INSTITUTES	SPONSO
CORRESPONDENCE	4	1	3	1	0
SIMPLE MANUALS	10	2	8	1	0
ILLUSTRATED BOOKS	3	1	2	0	0
ON-SITE INSTRUCTION	8	2	6	3	1
OTHER	14	2	11	9	1

Africa

CATEGORIES	TRANSFER AGENT	END-USER	FACIL-ITATOR	R & D INSTITUTES	SPONSO
CORRESPONDENCE	0	2	1	2	0
SIMPLE MANUALS	1	1	3	0	1
ILLUSTRATED BOOKS	1	1	3	0	1
ON-SITE INSTRUCTION	1	2	1	1	1
OTHER	1	1	1	1	1

TABLE 6: FORMAT FOR DESIRED RESOURCES (continued)

Latin America

CATEGORIES	TRANSFER AGENT	END-USER	FACILITATOR	R & D INSTITUTES	SP	SO
CORRESPONDENCE	0	0	1	0		0
SIMPLE MANUALS	2	3	4	3		1
ILLUSTRATED BOOKS	0	0	1	0		0
ON-SITE INSTRUCTION	2	1	3	2		1
OTHER	1	3	1	1		0

Near East

CATEGORIES	TRANSFER AGENT	END-USER	FACILITATOR	R & D INSTITUTES	SP	SO
CORRESPONDENCE	0	0	1	0		0
SIMPLE MANUALS	0	0	1	0		0
ILLUSTRATED BOOKS	0	0	1	0		0
ON-SITE INSTRUCTION	0	0	1	0		0
OTHER	0	0	0	0		0

Europe, North America and Japan

CATEGORIES	TRANSFER AGENT	END-USER	FACILITATOR	R & D INSTITUTES	SP	SO
CORRESPONDENCE	3	3	2	1		
SIMPLE MANUALS	1	1	3	1		
ILLUSTRATED BOOKS	0	1	1	0		
ON-SITE INSTRUCTION	6	1	3	2		2
OTHER	11	5	11	5		

	<u>Frequency</u>
Types of in-house Resources	
Technical Expertise	9
Publications	4
Technical Documents	3
Reports from Other Organizations	4
Demographic/Statistical Data	1
Geographic Data	2
Information on Funding Sources	2
Economic/Marketing Studies	3
Audio/Visual Aids	3
Other	0
TOTALS	31

Types of Resources Needed From Outside Sources

Specialized Technical Expertise	6
Publications	3
Technical Documents	8
Reports from Other Organizations	3
Demographic/Statistical Data	0
Geographic Data	1
Information on Funding Sources	3
Economic/Marketing Studies	1
Audio/Visual Aids	1
Other	2
TOTALS	28

SPECIAL END-USER RUN

Sources of Outside Resources	<u>Frequency</u>
Local/multi-state	6
National	5
Regional	1
Global	1
Same Purpose	5
Information Networks	0
Problems	
Contact is infrequent	8
Information takes too long to get	4
Difficult to identify who has what	7
Cost for information is too high	2
Information received too complex	1
Information received not translated	0
Too much information	0
Information is not clearly explained	1
Information is proprietary	1
Information is not accurate	0
Information is not tested	0
Other	1

SPECIAL END-USER RUN

Resource Needs & Wants

Technical Experts for Advice and Training	10
Publications	9
Up-to-date Technical Documents	6
Having Specific Questions Answered by Mail	6
Knowing Experiences of Similar Projects	13
Demographic/Statistical Projections	3
Geographic Data	2
Marketing Assistance	6
Other	1

Format

Correspondence	3
Simple Manuals	4
Illustrated Books	2
On-Site Instruction	5
Other	2

Regional Totals

CATEGORIES	TRANSFER AGENT	END-USER	FACIL-ITATOR	R & D INSTITUTES	SPOI	OR
EXCELLENT IDEA	51	16	32	28	12	0
GOOD IDEA	35	14	34	22	1	0
FAIR IDEA	17	11	31	10	6	0
BAD IDEA	2	2	4	0	0	0

Asia

CATEGORIES	TRANSFER AGENT	END-USER	FACIL-ITATOR	R & D INSTITUTES	SPOI	OR
EXCELLENT IDEA	15	4	12	7	2	0
GOOD IDEA	12	3	7	6	1	0
FAIR IDEA	2	0	3	1	0	0
BAD IDEA	0	0	0	0	0	0

Africa

CATEGORIES	TRANSFER AGENT	END-USER	FACIL-ITATOR	R & D INSTITUTES	SPOI	OR
EXCELLENT IDEA	11	4	9	5	2	0
GOOD IDEA	9	4	10	5	1	0
FAIR IDEA	10	9	11	4	1	0
BAD IDEA	1	1	1	0	0	0

TABLE 3: OPINION OF NETWORK IDEA

Table 8: Opinion of Network Idea (continued)

Latin America

CATEGORIES	TRANSFER AGENT	END-USER	FACIL-ITATOR	R & D INSTITUTES	SPONSOR
EXCELLENT IDEA	16	6	1	11	6
GOOD IDEA	9	4	11	8	7
FAIR IDEA	2	1	3	2	1
BAD IDEA	0	0	0	0	0

Near East

CATEGORIES	TRANSFER AGENT	END-USER	FACIL-ITATOR	R & D INSTITUTES	SPONSOR
EXCELLENT IDEA	0	0	2	1	0
GOOD IDEA	0	0	2	0	0
FAIR IDEA	0	1	1	0	0
BAD IDEA	1	1	2	0	0

Europe, North America and Japan

CATEGORIES	TRANSFER AGENT	END-USER	FACIL-ITATOR	R & D INSTITUTES	SPONSOR
EXCELLENT IDEA	2	2	3	4	2
GOOD IDEA	5	3	4	3	1
FAIR IDEA	3	0	13	3	1
BAD IDEA	0	0	0	0	0

Regional Totals

CATEGORIES	TRANSFER AGENT	END-USER	FACIL-ITATOR	R & D INSTITUTES	SPONSOR
VERY INTERESTED	62	15	61	35	10
SOMEWHAT INTERESTED	42	22	42	25	14
NOT INTERESTED	2	4	6	0	

Asia

CATEGORIES	TRANSFER AGENT	END-USER	FACIL-ITATOR	R & D INSTITUTES	SPONSOR
VERY INTERESTED	17	4	11	7	1
SOMEWHAT INTERESTED	11	3	9	7	1
NOT INTERESTED	1	1	1	0	1

Africa

CATEGORIES	TRANSFER AGENT	END-USER	FACIL-ITATOR	R & D INSTITUTES	SPONSOR
VERY INTERESTED	17	1	17	9	1
SOMEWHAT INTERESTED	14	13	14	5	5
NOT INTERESTED	0	0	0	0	0

TABLE 9: INTEREST IN PARTICIPATION

Table 9: Interest in Participation (continued)

Latin America

CATEGORIES	TRANSFER AGENT	END-USER	FACILITATOR	R & D INSTITUTES	SPO
VERY INTERESTED	19	8	24	14	
SOMEWHAT INTERESTED	8	3	9	7	
NOT INTERESTED	0	1	1	0	

Near East

CATEGORIES	TRANSFER AGENT	END-USER	FACILITATOR	R & D INSTITUTES	SPO
VERY INTERESTED	0	0	2	0	
SOMEWHAT INTERESTED	0	1	3	1	
NOT INTERESTED	1	1	3	0	

Europe, North America, and Japan

CATEGORIES	TRANSFER AGENT	END-USER	FACILITATOR	R & D INSTITUTES	SPONSOR
VERY INTERESTED	9	2	6	5	2
SOMEWHAT INTERESTED	9	2	7	5	2
NOT INTERESTED	0	1	1	0	0

Regional Totals

CATEGORIES	TRANSFER AGENT	END-USER	FACIL-ITATOR	R & D INSTITUTES	SPC SC
NONE	7	5	6	0	2
PERSONNEL TO ASSIST OTHER ORGANIZATIONS	51	21	53	34	
DESCRIPTION OF SERVICES	98	40	85	61	24
INFORMATION ON FUNDING SOURCES	40	15	47	25	
FUNDS	13	7	10	8	7
STAFF TO MAINTAIN THE SYSTEM	45	16	46	30	
LOCAL PUBLICATIONS	78	25	73	52	19
TRAINING	62	29	59	46	
OTHER	18	6	16	11	6

Asia

CATEGORIES	TRANSFER AGENT	END-USER	FACIL-ITATOR	R & D INSTITUTES	SPC SC
NONE	0	0	0	0	0
PERSONNEL TO ASSIST OTHER ORGANIZATIONS	16	4	15	8	
DESCRIPTION OF SERVICES	31	7	5	17	3
INFORMATION ON FUNDING SOURCES	13	3	10	7	
FUNDS	3	1	2	3	1
STAFF TO MAINTAIN THE SYSTEM	10	4	8	8	
LOCAL PUBLICATIONS	29	7	22	14	3
TRAINING	21	4	15	13	
OTHER	6	0	5	2	

TABLE 10: SERVICES OFFERED

Table 10: Services Offered (continued)

Africa

CATEGORIES	TRANSFER AGENT	END-USER	FACIL-ITATOR	R & D INSTITUTES	SPONSO
NONE	7	1	4	0	1
PERSONNEL TO ASSIST OTHER ORGANIZATIONS	8	7	6	6	0
DESCRIPTION OF SERVICES	27	16	28	16	5
INFORMATION ON FUNDING SOURCES	4	3	6	1	0
FUNDS	1	1	2	0	1
STAFF TO MAINTAIN THE SYSTEM	9	6	10	4	2
LOCAL PUBLICATIONS	12	8	13	13	2
TRAINING	13	13	11	10	1
OTHER	2	0	4	2	1

Latin America

CATEGORIES	TRANSFER AGENT	END-USER	FACIL-ITATOR	R & D INSTITUTES	SPONSOR
NONE	1	2	1	0	1
PERSONNEL TO ASSIST OTHER ORGANIZATIONS	20	7	23	14	10
DESCRIPTION OF SERVICES	22	9	30	18	12
INFORMATION ON FUNDING SOURCES	16	5	21	12	9
FUNDS	7	2	6	3	5
STAFF TO MAINTAIN THE SYSTEM	17	3	19	12	7
LOCAL PUBLICATIONS	13	3	23	14	10
OTHER	3	3	6	5	5

Table 10: Services Offered (continued)

Near East

CATEGORIES	TRANSFER AGENT	END-USER	FACIL-ITATOR	R & D INSTITUTES	SPC SOI
NONE	1	0	1	0	0
PERSONNEL TO ASSIST OTHER ORGANIZATIONS	0	0	1	0	
DESCRIPTION OF SERVICES	0	1	6	0	
INFORMATION ON FUNDING SOURCES	0	0	2	0	
FUNDS	0	0	0	0	
STAFF TO MAINTAIN THE SYSTEM	0	0	0	0	0
LOCAL PUBLICATIONS	0	0	1	0	
TRAINING	0	0	1	0	0
OTHER	0	0	0	0	

Europe, North America, and Japan

CATEGORIES	TRANSFER AGENT	END-USER	FACIL-ITATOR	R & D INSTITUTES	SPONSOR
NONE	0	0	0	0	
PERSONNEL TO ASSIST OTHER ORGANIZATIONS	7	3	8	6	1
DESCRIPTION OF SERVICES	16	7	16	10	
INFORMATION ON FUNDING SOURCES	7	4	8	5	
FUNDS	1	0	1	2	0
STAFF TO MAINTAIN THE SYSTEM	9	3	9	6	
LOCAL PUBLICATIONS	19	6	14	11	4
TRAINING	9	6	8	8	
OTHER	2	3	1	2	0

Regional Totals

CATEGORIES	TRANSFER AGENT	END-USER	FACILITATOR	R & D INSTITUTES	SPONSOR
NONE	13	7	14	9	4
ACCESS OPEN TO ALL	62	24	63	40	15
ACCESS DENIED TO CERTAIN GROUPS	5	2	6	3	1
MUST HAVE PRIORITY ACCESS	11	5	8	13	3
MUST BE FREE	36	14	44	23	10
MUST BE REASONABLY PRICED	50	19	61	30	13
MUST BE REIMBURSED	18	11	17	13	6
MUST HAVE MINIMUM BOTHER	32	13	34	17	10
MUST BE CONFIDENTIAL	12	5	16	9	6
OTHER	22	10	16	8	6

Asia

CATEGORIES	TRANSFER AGENT	END-USER	FACILITATOR	R & D INSTITUTES	SPONSOR
NONE	3	0	2	2	0
ACCESS OPEN TO ALL	18	5	14	10	1
ACCESS DENIED TO CERTAIN GROUPS	1	0	1	0	0
MUST HAVE PRIORITY ACCESS	6	1	4	1	1
MUST BE FREE	11	5	9	7	0
MUST BE REASONABLY PRICED	22	4	17	10	1
MUST BE REIMBURSED	5	2	2	3	0
MUST HAVE MINIMUM BOTHER	9	3	8	7	0
MUST BE CONFIDENTIAL	4	1	3	2	2
OTHER	7	2	5	0	1

TABLE 11: CONDITIONS UPON PARTICIPATION

Table 11: Conditions upon Participation (continued)

Africa

CATEGORIES	TRANSFER AGENT	END-USER	FACILITATOR	R & D INSTITUTES	SPONSOR
NONE	9	5	7	4	2
ACCESS OPEN TO ALL	10	5	9	7	1
ACCESS DENIED TO CERTAIN GROUPS	2	1	2	1	0
MUST HAVE PRIORITY ACCESS	1	1	1	0	0
MUST BE FREE	14	4	13	3	1
MUST BE REASONABLY PRICED	12	9	17	6	3
MUST BE REIMBURSED	6	6	5	4	0
MUST HAVE MINIMUM BOTHER	4	4	3	2	4
MUST BE CONFIDENTIAL	2	2	4	2	1
OTHER	8	4	6	3	1

Latin America

CATEGORIES	TRANSFER AGENT	END-USER	FACILITATOR	R & D INSTITUT	SPONSOR
NONE	0	1	1	1	1
ACCESS OPEN TO ALL	21	10	23	15	11
ACCESS DENIED TO CERTAIN GROUPS	0	0	0	1	0
MUST HAVE PRIORITY ACCESS	4	2	3	3	2
MUST BE FREE	9	3	14	7	7
MUST BE REASONABLY PRICED	12	3	17	10	8
MUST BE REIMBURSED	2	0	5	2	3
MUST HAVE MINIMUM BOTHER	10	3	11	4	5
MUST BE CONFIDENTIAL	5	1	7	4	3
OTHER	5	3	4	4	3

Table 11: Conditions upon participation (continued)

Near East

CATEGORIES	TRANSFER AGENT	END-USER	FACILITATOR	R & D INSTITUTES	SPONSOR
NONE	0	1	3	0	0
ACCESS OPEN TO ALL	0	0	2	0	0
ACCESS DENIED TO CERTAIN GROUPS	0	0	0	1	0
MUST HAVE PRIORITY ACCESS	0	0	0	0	0
MUST BE FREE	0	0	1	0	0
MUST BE REASONABLY PRICED	0	0	2	0	0
MUST BE REIMBURSED	0	0	0	0	0
MUST HAVE MINIMUM BOTHER	0	0	0	0	0
MUST BE CONFIDENTIAL	0	0	1	0	0
OTHER	0	0	0	0	0

Europe, North America and Japan

CATEGORIES	TRANSFER AGENT	END-USER	FACILITATOR	R & D INSTITUTES	SPONSOR
NONE	1	0	1	2	1
ACCESS OPEN TO ALL	13	4	9	8	2
ACCESS DENIED TO CERTAIN GROUPS	2	1	3	1	1
MUST HAVE PRIORITY ACCESS	0	1	0	1	0
MUST BE FREE	11	2	7	6	2
MUST BE REASONABLY PRICED	4	3	8	4	1
MUST BE REIMBURSED	5	3	5	4	0
MUST HAVE MINIMUM BOTHER	9	3	7	1	1
MUST BE CONFIDENTIAL	1	1	1	1	0
OTHER	2	1	1	1	2

	<u>Frequency</u>
Opinion of Network Idea	
Excellent	3
Good	1
Fair	0
Bad	0
Interested in Participating	
Very Interested	5
Somewhat Interested	0
Not Interested	0
Services Offered to Network	
None	0
Personnel to Assist Others	5
Description of Services	11
Information on Funding Sources	11
Funds to Operate System	2
Staff to Maintain It	1
Your Publications	3
Training of Others	9
Other	0
TOTAL	47

TABLE 12: SPECIAL END-USER RUN

SPECIAL END-USER RUN

	<u>Frequency</u>
Conditions Upon Participation	
None	2
Access Open to All	5
Access Open for Certain Groups	2
Access Excluded to Certain Groups	0
Must have Priority Access	1
Service Must be Free	5
Service Must be Reasonably Priced	5
Must be Reimbursed	3
Must have Minimum Bother	2
Must be Confidential	3
Others	0
TOTAL	28

Regional Totals

CATEGORIES	TRANSFER AGENT	END-USER	FACILITATOR	R & D INSTITUTES	SPONSOR
CENTRAL	34	18	41	26	1
REGIONAL	61	17	56	32	14
NATIONAL	54	18	48	27	

Asia

CATEGORIES	TRANSFER AGENT	END-USER	FACILITATOR	R & D INSTITUTES	SPONSOR
CENTRAL	7	2	3	7	1
REGIONAL	17	3	3	4	1
NATIONAL	15	6	9	9	1

Africa

CATEGORIES	TRANSFER AGENT	END-USER	FACILITATOR	R & D INSTITUTES	SPONSOR
CENTRAL	13	10	16	9	3
REGIONAL	13	6	11	11	1
NATIONAL	19	5	14	7	2

TABLE 13: PREFERRED NETWORK STRUCTURE

TABLE 13 : PREFERRED NETWORK STRUCTURE (continued)

Latin America

CATEGORIES	TRANSFER AGENT	END-USER	FACIL-ITATOR	R & D INSTITUTES	SPONSO
CENTRAL	8	4	12	6	5
REGIONAL	20	5	20	13	9
NATIONAL	8	4	11	8	4

Near East

CATEGORIES	TRANSFER AGENT	END-USER	FACIL-ITATOR	R & D INSTITUTES	OR
CENTRAL	0	0	1	0	
REGIONAL	0	0	2	1	
NATIONAL	0	0	4	1	

Europe, North America and Japan

CATEGORIES	TRANSFER AGENT	END-USER	FACIL-ITATOR	R & D INSTITUTES	SPONSOR
CENTRAL	6	2	1	1	1
REGIONAL	6	3	7	3	3
NATIONAL	11	3	8	1	2

APPENDIX 2: ACTION PLAN LEADER AGENCY PROFILES

Leader Agency Profiles

Country: Philippines

Name: International Rice Research Institute

Goals: To work towards development of improved varieties and technologies of rice and its production

Staff: 1,841 35 permanently in field

Budget: Greater than \$1,000,000

Fields: Education/Communication
Agriculture
Renewable Energy

Services: Extension/Training
Documentation
Consultancy
Product Research and Development
Product Design and Modification

Country: Philippines

Name: Institute of Small Scale Industry

Goals: To search and promote innovative ways to serve the industrial information needs of small industries

Staff: 40, 4 permanently in field

Budget: \$100-500,000

Fields: Home Technology/Crafts
Industry/Labor
Agriculture
Renewable Energy

Services: Management, Administration Advice
Extension/Training
Documentation
Consultancy
Product Research and Development
Product Design and Modification
Community organization, cooperative development

Leader Agency Profiles

Country: Philippines
 Name: Ministry of Energy Bureau and Energy Development
 Goals: To make Philippines' self-sufficient in energy
 Staff: 35
 Budget: Greater than \$1,000,000
 Fields: Renewable Energy

Services: Management/Administration Advice
 Extension/Training
 Financial Assistance
 Documentation
 Consultancy
 Product Research & Development
 Product Design and Modification

Country: Philippines
 Name: Philippine Center for Appropriate Training and Technology
 Goals: Development and promotion of Appropriate Technology towards the pursuit of a just peace, redistribution and development of the world's resources
 Staff: 19, 6 permanently in field
 Budget: Not available
 Fields: Public Health and Medicine Agriculture
 Home Technology/Crafts Water Supply/Public Works
 Industry/Labor Renewable Energy
 Nutrition
 Housing, Construction
 Services: Management/Administration Advice Consultancy
 Extension/Training Marketing Assistance
 Financial Assistance Product Design and Modification
 Documentation Community Organization/Cooperative
 Product Research and Development Development

Leader Agency Profiles

Country: Philippines

Name: Technology Resource Center

Goals: To promote the delivery of technology by creating the conditions necessary to make the application of technology economically viable and sociable.

Staff: Not available

Budget: \$500,000 - 1,000,000

Fields: Home Technology/Crafts
Industry/Labor
Housing/Construction
Agriculture
Water Supply/Public Works
Food Processing

Services: Management/Administration Advice Community Organization/
Financial Assistance Cooperative Development
Documentation
Consultancy Marketing
Marketing Assistance

Country: Indonesia

Name: National Scientific Documentation Center

Goals: To render library, documentation, and information services in the fields of science, technology, and social sciences

Staff: 130, 0 in the field

Budget: \$100-500,000

Fields: Renewable Energy
Science and Technology

Services: Library Services

Leader Agency Profiles

Country: Indonesia

Name: LIPI

Goals: To perform research and development activities directed at developing AT beneficial to rural life

Staff: 35, 8 permanently in the field

Budget: \$100-500,000

Fields: Home Technology/Crafts
Industry/Labor
Agriculture
Water Supply/Public Works
Renewable Energy

Services: Extension/Training
Documentation
Consulting
Product R & D
Community Services

Country: Indonesia

Name: Dian Desa

Goals: To promote rural technologies among low-income people in Central Java

Staff: 43, 29 permanently in the field

Budget: \$500-1,000,000

Fields: Nutrition
Housing/Construction
Agriculture
Water Supply/Public Works
Renewable Energy

Services: Extension/Training
Consulting
Product Design and Modification
Community Organization/Cooperative Development
Community Services

Leader Agency Profiles

Country: Sri Lanka

Name: Sarvodaya Shramadana Movement

Goals: Rural development through small industry development

Staff: 81, 300 permanently in the field

Budget: Greater than \$1,000,000

Fields:	Education/Communication	Housing/Construction
	Public Health and Medicine	Agriculture
	Home Technology/Crafts	Water Supply/Public Works
	Industry/Labor	Renewable Energy
	Nutrition	

Services:	Management/Administration Advice	Community Organization/Cooperative
	Extension/Training	Development
	Financial Assistance	Marketing
	Product Design and Modification	Community Services

Country: Sri Lanka

Name: Industrial Development Board

Goals: Giving technical, marketing, management assistance to small and medium scale industrialists

Staff: 245

Budget: Not available

Fields: Industry
Renewable Energy

Services:	Management/Administration Advice	Marketing
	Extension/Training	Product Design and Modification
	Documentation	
	Consultancy	
	Product Research and Development	

Leader Agency Profiles

Country: Botswana

Name: Botswana Technology Centre

Goals: To promote the introduction of technology; to serve as a national technical library; to establish links with other groups in Botswana and other countries

Staff: 1, 3 additional positions planned

Budget: \$100-500,000

Fields: Industry/Labor
Renewable Energy

Services: Extension/Training
Documentation
Consulting
Product Research and Development

Country: Botswana

Name: Rural Industries Innovation Centre

Goals: to provide development of rural industries in Botswana

Staff: 96

Budget: \$500-1,000,000

Fields: Public Health/Medicine Water Supply/Public Works
Home Technology/Crafts Renewable Energy
Industry/Labor
Housing/Construction
Agriculture

Services: Extension/Training
Documentation
Consulting
Product Research and Development
Marketing Assistance
Community Organization/Cooperative Development

Leader Agency Profiles

- Country: Botswana
- Name: Pelegano Village Industries
- Goals: To promote the establishment of cottage and small-scale industries in rural areas
- Staff: 95, 95 in the field
- Budget: \$100-500,000
- Fields: Home Technology/Crafts
Industry/Labor
Housing/Construction
Agriculture
Water Supply/Public Works
Renewable Energy
- Services: Management/Administration Advice
Extension/Training
Financial Assistance
Product Research and Development
Marketing Assistance
Production
-
- Country: Botswana
- Name: Brigades Development Centre (BRIDEC)
- Goals: To promote practical education through development and coordination of the Botswana Brigade Programs
- Staff: 25, 0 permanently in the field
- Budget: 3500-1,000,000
- Fields: Education/Communication
Home Technology/Crafts
Industry/Labor
Housing/Construction
Agriculture
Water Supply/Public Works
- Services: Management/Administration Advice
Extension/Training
Financial Assistance
Consulting

Leader Agency Profiles

Country: Kenya

Name: Karen Village Technology Center

Goals: to promote development and dissemination of village technologies in Eastern Africa

Staff: 17, 4 in the field

Budget: not for release

Fields: Home Technology/Crafts
Agriculture
Renewable Energy

Services: Extension/Training
Documentation
Consulting
Product Design and Modification

Country: Kenya

Name: National Council of Science and Technology (Information Center)

Goals: to advise the Kenyan government on all matters concerning science and technology

Staff: 1 (Information Section), 0 in the field

Budget: \$10-100,000

Fields: Public Health/Medicine
Industry/Labor
Renewable Energy
Non-renewable Energy
General Science and Technology

Services: Documentation
Research
Policy formation

Leader Agency Profiles

Country: Kenya

Name: Environment Liaison Centre

Goals: to promote awareness of environmental issues; to develop and disseminate technologies with low impact on environment

Staff: 8, 2 in the field

Budget: \$100-500,000

Fields: Education/Communication
Population/Family Planning
Renewable Energy
Environment

Services: Extension/Training
Financial Assistance
Documentation
Community Organization/Cooperative Development

Country: Senegal

Name: Environment et Developpment du Tiers Monde (ENDA)

Goals: to establish a network for exchange of experiences in AT in West Africa

Staff: 35, 10 in the field

Budget: Greater than \$1,000,000

Fields: Education/Communication
Public Health/Medicine
Home Technology/Crafts
Population/Family Planning
Nutrition
Housing/Construction
Agriculture
Water Supply/Public Works
Renewable Energy

Services: Management/Administration Advice
Extension/Training
Documentation
Consulting
Community Organization/Cooperative Development

Leader Agency Profiles

Region: Caribbean
 Name: Caribbean Development Bank - Energy and Technology Unit
 Goals: to sponsor dissemination of small scale technologies, including the evaluation of these technologies, networking with other AT organizations
 Staff: 8, 0 in the field
 Budget: Greater than \$1,000,000
 Fields: Agriculture
 Renewable Energy
 Services: Project Supervision
 Extension/Training
 Financial Assistance
 Documentation
 Marketing
 Demonstration Studies

Region: Caribbean
 Name: Christian Action for Development in the Caribbean (CAUEC)
 Goals: to sponsor local development activities and integration of these activities with church activities
 Staff: 37, 1 in the field
 Budget: Greater than \$1,000,000
 Fields: Education/Communication
 Home Technology/Crafts
 Population/Family Planning
 Nutrition
 Housing/Construction
 Agriculture
 Renewable Energy
 Community Development
 Services: Management/Administration Advice
 Extension/Training
 Financial Assistance
 Documentation
 Marketing Assistance

Leader Agency Profiles

Region: Caribbean
 Name: Caribbean Industrial Research Institute (CARIRI)
 Goals: to support industrial development by information collection and dissemination analytical work, testing, engineering and economic studies
 Staff: 150, 0 in the field
 Budget: Greater than \$1,000,000
 Fields: Public Health and Medicine
 Industry/Labor
 Housing/Construction
 Water Supply/Public Works
 Non-renewable Energy
 Services: Extension/Training
 Documentation
 Consulting
 Product Research and Development
 Marketing

Region: Caribbean
 Name: Caribbean Agricultural Research and Development Institute (CARDI)
 Goals: to support agricultural research and development

 Staff: 120, 25 in the field
 Budget: Greater than \$1,000,000
 Fields: Agriculture

 Services: Extension/Training
 Documentation
 Consulting
 Product Research and Development
 Marketing Assistance

Leader Agency Profiles

Region: Central America
 Name: Centro de Estudios Mesoamericanos sobre Tecnologia Apropiada (CEMAT)
 Goals: to promote AT development in Central America

 Staff: 10
 Budget: \$100-500,000
 Fields: Education/Communication Housing Construction
 Public Health/Medicine Agriculture
 Home Technology/Crafts Water Supply/Public Works
 Industry/Labor Renewable Energy

 Services: Extension/Training
 Documentation
 Consulting
 Product Research and Development
 Community Organization/Cooperative Development
 Community Services

Country: Jordan
 Name: CARE/MEDICO
 Goals: to promote and disseminate low cost technologies

 Staff: 20
 Budget: Greater than \$1,000,000
 Fields: Public Health and Medicine
 Nutrition
 Housing/Construction
 Agriculture
 Water Supply/Public Works
 Renewable Energy
 Services: Extension/Training
 Community Organization/Cooperative Development
 Community Services

Leader Agency Profiles

Country: Jordan

Name: Royal Scientific Society

Goals: To promote and coordinate scientific and technological research in Jordan: to make information on science and technology more available to agencies working in Jordan

Staff: 420, 0 in the field

Budget: Greater than \$1,000,000

Fields: Education/Communication
Industry/Labor
Housing/Construction
Renewable Energy

Services: Extension/Training
Documentation
Consulting
Product Research and Development

APPENDIX 3: SURVEY PARTICIPANTS

SURVEY PARTICIPANTSArgentina

Fundacion para el Desarrollo en Justicia y Paz (FUNDAPAZ)
Secretaria de Estado de Desarrollo Urbana y Vivienda

Austria

Center for Alternative Energies in Developing Countries
Entwicklungshilfe - Klub (Club for Development Assistance)
International Patent Documentation Center (INPADOC)
United National Industrial Development Organization (UNIDO)
World Organization of the Scout Movement

Bangladesh

Agricultural Development Agencies of Bangladesh (ADAB)
Crescent
Ratanpur Agricultural Implement and Training Centre
United Nations Development Programme in Bangladesh (UNDP)
Village Education Resource Center

Barbados

Christian Action for Development in the Caribbean (CADEC)
Caribbean Development Bank
Coral Island Potteries
Meals for Millions Foundation
U.S. Peace Corps/Barbados

Belgium

Collectif d'Echanges pour la Technologie Appropriée (COTA)
Post Graduate Center - Human Settlements

Bolivia

Centro de Coordinacion y Promocion Campesina Minkia
 Centro para el Desarrollo Social y Economico (DESEC)
 Corporacion Boliviana de Fomento
 Mision de Amistad
 Universidad Pontifica Bolivariana

Botswana

Botswana Christian Council
 Botswana Technology Center
 Brigades Development Centre
 International Voluntary Services (IVS)
 Kanye Brigades Development Trust
 Kwening Rural Development Association
 Mennonite Central Committee
 Ministry of Commerce and Industry
 Mochudi Farmers Brigade
 National Institute of Development and Cultural Research (N.I.R.)
 Peace Corps
 Pelegano Village Industries
 Rural Industries Innovation Centre (RIIC)
 Serowe Foods
 University of Botswana
 U.S. - A.I.D. Mission

Brazil

Centro Tecnologico de Minas Gerais
 Coop. Central do Brazil Rural Ltola
 Federacao de Orgaos para Assistencia (FASE)
 FINEP

Cameroon

GENEEMA

Canada

Canadian Hunger Foundation
 Centre for International Research Cooperation
 Coady International Institute of Nova Scotia
 International Development Research Centre (IDRC)
 Sudbury 2001

Chile

Centro de Estudios En Tecnologias Apropriadas para A. L.
 Centro de Estudios para el Desarrollo Cooperativo (CEDEC)
 CIDEME
 CIDERE BIOBIO
 Escuela Nacional de Capacitacion
 Fundacion para el Desarrollo Regional de Aysen
 Instituto Chileno de Educacion Cooperativa
 Instituto de la Autogestion
 Instituto de Educacion Rural
 Instituto Tecnologico de Chile (INTEC)
 Secretariado de Comunicacion Social

Colombia

Accion Cultural Popular
 Biblioteca Agropecuaria de Colombia - Instituto Colombiano Agropecuaria
 Central de Cooperativas - Agrarias de Occidente, Ltda.
 Centro de Estudios Sobre Desarrollo Economico
 Centro Internacional de Agricultura Tropical (CIAT)
 Corporacion de Desarrollo (CODESARROLLO)
 Estudios Urbanos USOR
 FICITEC
 FUNDECLAM
 Instituto Nacional de Recursos Naturales Renovables y del Amb
 Instituto Ser de Investigacion
 Sena - Astin (Asistencia Tecnica a la Industria)
 Universidad Pontificia Bolivariana

Costa Rica

Asociacion de Desarrollo Economico Laboral Familiar Integral
 Centro Agronomico Tropical de Investigacion y Ensenanya (CATIE)
 Centro de Investigacion y Capacitacion R. L.
 Centro de Investigaciones en Tecnologia de Alimentos Facultad de Agronomia
 Universidad de Costa Rica (CITA)
 Centro de Investigaciones en Tecnologia de Alimentos
 Universidad de Costa Rica
 Instituta Interamericano de Ciencias Agricolas (IICA)
 Instituto Tecnologico de Costa Rica
 Mario Riggioni
 Secretaria Interamericana de Juventudes Rurales del IICA
 U.S. - A.I.D.

Cyprus

Higer Technical Institute

Denmark

Community Action

Djibouti

Red Sea Mission Team

Dominica

Dominica Christian Council and CADEC Local Development d

Dominican Republic

Finola Giraldes
 Fundacion Dominicana de Desarrollo
 Fundacion Gulf and Western Dominicana
 IMSA Proyectos y Servicios, S.A.
 Instituto Dominicano de Tecnologia Industrial (INDOTEC)
 Peace Corps
 Solidarios Consejo de Fundaciones Americanas de Desarrollo
 U.S. - A.I.D.

Ecuador

Eanna O Broin
 Fundacion Ecuatoriana de Desarrollo (FED)
 Instituto Cooperativo Ecuatoriano de Educacion y Desarrollo
 Instituto de Investigaciones Tecnologias - E.P.N.
 CENDES
 U.S. - A.I.D.

Egypt

American Mission in Egypt

El Salvador

Asociacion CREDHO

Ethiopia

Catholic Relief Services - Ethiopia Program
 Intermediate Technology Center
 Ministry of Education
 SEDOC - Ethiopia
 United Nations Children's Fund

Fiji

Business Opportunity Management Advisory Service
 Center for Appropriate Technology, University of the South Pacific
 Development Institute of Natural Resources, University of the South Pacific
 Extension Services, University of the South Pacific

France

Centre de' Etudes et d'Experimentation due Machimisme Agricole Tropical
 (CEEMAT)
 Centre International de Recherches sur l'Environement et le Developpement
 (CIRED)
 CRATERRE
 GRET
 Nature et Vie
 OECD Development Center
 Office de la Recherche Scientifique et Technique d'Outre-Mer

The Gambia

Ministry of Agriculture and Natural Resources

Germany

German Appropriate Technology Exchange (GATE)
German Foundation for International Development
Interdisciplinary Project Group of Appropriate Technology

Ghana

Agricultural Development Bank
Centre for Development Studies, University of Cape Coast
Council for Scientific and Industrial Research
Ghana Organization of Volunteer Assistance
Institute of Adult Education
Noble Best Investments
Rural Community Development Agency
Technoserve, Inc.
University of Ghana - Department of Agriculture
University of Ghana - Department of Nutrition and Food Science
Voluntary Workcamps Association of Ghana

Guatemala

Agua del Pueblo
Centro de Estudios Mesoamericanos sobre Tecnologia Apropriada (CEMAT)
EACA
Estacion Experimental ICADA-CHOQUI
Federacion Nacional de Cooperativas Agricolas de Guatemala
Hogar y Desarrollo
Institute Centroamericano de Investigacion y Tecnologia

Guyana

Guyana Cooperative Agricultural and Industrial Development Bank

Haiti

Eglise Episcopale d'Haiti
Institut de Technologie et D'Animation (ITECA)

Honduras

Biblioteca Wilson Popenoe
 Centro de Desarrollo Industrial (CDI)
 Centro de Documentacion y Informacion Agricola
 Centro de Informacion Industrial
 Centre de Informacion Industrial del Banco Central
 Centro de Educacion Vocacional Evangelico y Reformado
 Instituto de Investigacion y Formacion Cooperativista
 International Voluntary Technical Services

India

Academy of Development Science
 Action for Food Production (AFPRO)
 Action for Agricultural Renewal in Maharashtra (AFARM)
 Agricultural Tools Research Centre
 Appropriate Technology Centre-Perarignan Anna University of Technology
 Appropriate Technology Development Association
 Aspec Agricultural Research and Development Foundation
 Assam Jyouti Club
 ASTRA - Centre for Application of Science and Technology to Rural Areas
 Bharat Krisnak Sarmaj
 Boys Town
 Centre for Development of Instructional Technology
 Department of Metallurgical Engineering
 Forest Research Institute
 Ghandhi Peach Foundation
 Garg Consultants
 Immaculate Heart of Mary Hospital
 Nutrition Education Unit & Public Health Project
 Rural Development Organisation
 Tata Energy Research Institute
 Vigyan Shiksha Kendra
 Yantra Vidyalay

Indonesia

Christian Foundation for Public Health
 Dian Desa

Indonesia, cont.

Directorate of Building Research U.N. Regional Centre for Research on
Human Settlements

National Institute for Physics (LIPI)

National Scientific Documentation Center

Ireland

Low Energy Systems

Agency for Personal Service Overseas

Israel

International Institute for Development Cooperation and Labour Studies

Institute of Agricultural Engineering

Ivory Coast

Institut National Pour le Developpement Economique et Social

Regional Housing and Urban Development Organization U.S. - A.I.D.

Jamaica

Alternative Technology Centre

Caribbean Conference of Churches

College of Arts, Sciences, and Technology

Department of Energy

Peace Corps

Scientific Research Council

Small Business Marketing Agency, Ltd.

Small Enterprises Development Corporation

Japan

Asian Productivity Organization

Japan Overseas Cooperation Volunteers

International Development Center of Japan

JISCA - International

Jordan

CARE/MEDICO
 Catholic Relief Services
 Royal Scientific Society

Kenya

The Agent of Change Society
 Agricultural Machinery Testing Unit
 African Medical Research Foundation
 CARE - Kenya
 Christian Industrial Training Center (CITC)
 Christian Industrial Training Centres Secretarial College
 CRS - Catholic Relief Services
 CUSO/EA-Acord, Sudan
 Department of Adult Education
 Environment Liaison Centre
 E. Pokot Agricultural Project
 Evangelical Rural Development
 Family Planning International Assistance
 Housing Research and Development Unit
 Kenya Industrial Research and Development Institute
 National Christian Council of Kenya
 Information Section National Council of Science
 P.C.E.A. Chogoria Hospital
 R. P. Slade
 Summer Institute of Linguistics Ministry of Education
 UNESCO Regional Office for Science and Technology for Africa
 UNICEF Regional Office of E. A. U. N. Complex
 United Nations Development Programme
 United Nations Environment Programme
 U.S. Peace Corps

Korea

Korea Scientific and Technological Information Center (KORSTIC)
 Pool Moo High School

Lesotho

Appropriate Technology Unit
CARE - Lesotho
Plenty Lesotho

Liberia

CARE - Liberia
United Nations Development Program Development Bank
U.S. Peace Corps
West African Rice Research Association

Madagascar

Ettablissement d'Enseignement Polytechnique

Malawi

Commercial Bank of Malawi
Extension Aids Branch

Malaysia

CEPTA Television
Malaysian Agricultural Research and Development Institute

Mali

Bureau de Machinisme Agricole
CARE - Mali
Direction Nationale de Formation Agricole Rurale
Peace Corps/Mali
Project Energie Renouvelable

Mauritius

Lorrno Sugar Corporation, Ltd.

Mexico

Centro de Estudios Economicos y Sociales del tercer Mundo
Centro de Informacion

Mexico, cont.

Departamento de proyectos Especiales, ITESM
INFOTEC
Intermediate Technology Center
Servicio de Consulta a Bancos de Informacion

Nepal

Agricultural Projects Services Center
Balaju Yantra Shala (P) Ltd.
Peace Corps/Nepal
Research Center for Applied Science and Technology
Fr. B. Saubolle
Swiss Association for Technical Assistance

Netherlands

AGROMISA
Appropriate Technology, Eindhoven University of Technology
Delft Center for Appropriate Technology
SWD - Steering Committee Wind Energy in Developing Countries
TOOL
W.O.T. (Workgroup on Development)

New Caledonia

South Pacific Commission

New Zealand

Department of Scientific and Industrial Research

Nigeria

International Institute of Tropical Agriculture
Mennonite General Committee
Voluntary Service Overseas

Pakistan

Appropriate Technology Development Organization
 Pakistan Academy for Rural Development
 Pakistan Scientific and Technological Information Centre
 U.S. - A.I.D.

Panama

Centro para el Desarrollo de la Capacidad Nacional de Investigacion
 Cooperativa de Vivienda (Nuevo Chorrillo, N.L.)

Paraguay

Central Cooperativa Nacional "Credicoop" Ltda.
 Centro Paraguayo de Estudios Sociologicos (C.P.E.S.)
 Confereracion Latinoamericana de Cooperativas de Ahorra y Credito
 Instituto Nacional de Tecnologia y Normalizacion

Papua New Guinea

ATDU
 Dept. of Primary Industry
 International Voluntary Services
 Liklik Buk Information Center
 South Pacific Appropriate Technology Foundation (SPATF)
 SPATF - Village Equipment Supplies

Peru

Banco Industrial del Peru
 CCTA
 CENIP
 CENIRA - Cedsa
 INDA
 Instituto de Investigaciones Tecnologica Industrial (ITINTEC)
 Proyecto Huaylas
 Universidad Nacional Tecnica del Altiplano

Philippines

Agency for Community Educational Services
 Centre for the Development of Human Resources in Rural Asia
 Documentation Center for the Ministries of Industry and Board of Investments
 Institute of Small Scale Industry
 International Institute of Rural Reconstruction Economic Development
 Foundation
 International Rice Research Institute (IRRI)
 Non-Conventional Energy Program
 Pantiar Farmers Association
 Philippine Business for Social Progress
 Philippine Center for A. T. Training
 Technology Resource Center
 VITAPHIL
 Silliman University

Rwanda

Catholic Relief Services

Senegal

Elegation de Recherche Scinetifique et Technique
 ENDA
 ONUDI/UNIDO
 Peace Corps/Senegal
 U.S. - A.I.D./Senegal

Sierra Leone

L. J. Haveman

Singapore

Technonet Asia
 CEPTA Television

South Africa

Africa Tree Center
 Intermediate Technology and Small Industries Development Unit

Sri Lanka

Industrial Development Board
Sarvodaya Shromadema Movement

Sudan

University of Khartoum

Swaziland

Small Enterprises Development Co., Ltd.
Tinkabi International

Sweden

International Foundation for Science
SIDA

Switzerland

Commission on the Churches' Participation in Development
HELVETAS (SATA)
International Labour Organization
Program of Appropriate Technology for Health (WHO)
Research Institute for Biological Farming
SKAT - Swiss Center for A. T.
SWISSAID
World Organization of the Scout Movement

Tanzania

Arusha Appropriate Technology Project
AT "Cluster"
Baptist Mission Mbeya Station
Catholic Mission South Meru
Catholic Relief Services
Development Services Department of the Christian Council of Tanzania
Diocese of Central Tanganyika
F.A.O. Rice Project URT-73-024
Kanisa La Mennonite

Tanzania, cont.

OXFAM
Sheriff Dewji and Sons, Ltd.
Small Industries Development Organization
Tropical Pesticides Research Institute
United Nations Development Programme
University of Dar Es Salaam
U.S. Peace Corps
Vyole Agricultural Centre

Thailand

Asian Institute of Technology
Population and Community Development Association
Thai National Documentation Centre

Trinidad

Association for Caribbean Transformation
Caribbean Agricultural Research and Development Institute
Caribbean Industrial Research Institute
Industrial Development Corporation
Trinidad and Tobago Development Foundation, Ltd.

Togo

Centre de la Construction et du Logement
U.S. Peace Corps/Togo
Universite du Benin Ecole des Sciences

Tunisia

Catholic Relief Services/Tunisia
Care/Tunisia
U.S. Peace Corps/Tunisia

Uganda

Department of Physics Makerere University
Management Training and Advisory Centre

United Kingdom

Acon Society Trust
 Appropriate Health Resources and Technologies Action Group
 Commonwealth Science Council
 Earthscan
 Institute of Child Health
 Institute of Development Studies University of Sussex
 National Energy Association
 National Institute of Agricultural Engineering
 The Smallholders
 Tropical Products Institute

United States of America

Accion International/AITSC
 Agricultural Cooperative Development Institute
 Alternative Sources of Energy
 Auburn University: International Center for Aquacultura
 Appropriate Technology International (ATI)
 California State Office of Appropriate Technology
 Christian Reformed World Relief Committee
 Community Technology
 Denver Research Institute: Office of International Programs
 Economic Development Foundation
 Energy Education Project
 Farallones Institute Rural Center
 Food Science and Human Nutrition Department of the University of Florida
 Gardens for All
 Georgia Institute of Technology
 Hawaii Community Design Center
 Hawaii Natural Energy Institute
 International Plant Protection Center
 Interact
 Maui Community College
 Meals for Millions Freedom from Hunger Foundation
 Dr. F. R. Morral
 National Center for Appropriate Technology

ited States, cont.

Navajo Community College
 New Alchemy Institute
 RAIN Journal of Appropriate Technology
 Resource System Sys. Institute
 Rodale Press, Inc.
 Solar Energy Research Institute (SERI)
 Sunflower Power Co.
 Sunpower, Inc.
 Technical Assistance Information Clearing House
 Technoserve, Inc.
 U. S. Peace Corps Information Collection and Exchange (ICE)
 Volunteers in Asia
 The World Bank

Uruguay

Centro Cooperativista Uruguayo (CCU)
 FUCAC
 Instituto de Promocion Economico Social del Uruguay

Upper Volta

U.S. - A.I.D.

Venezuela

Asociacion de Geocientificos para el Desarrollo Internacion Agricultura
 Centro Nacional de Investigaciones Agropecuarias
 CONICIT
 Cooorporacion para el Desarrollo de la Pequena y Mediana Industria
 Fundacion para la Capacitacion y Investigacion Aplicada a la Reforma
 Agraria (C.I.A.R.A.)
 Fundacion para el Desarrollo de la Region Centro Occidental
 FUDECO

West Indies

Island Resources Foundation
 Organization for Rural Development

Yemen Arab Republic

U.S. Peace Corps
Save The Children - Yemen

Zaire

Centre d'Etudes Pour l'Action Sociale (CEPAS)

Zambia

American Friends Service Committee
Central Fisheries Research Institute
International Red Locust Control Organization for Central and Southern Africa
Makeni Ecumenical Centre
Rural Development Studies Bureau
Secretariate for Lay Apostolate
United Nations Development Programme
Zambia Episcopal Conference

APPENDIX 4: DATA BASE DESCRIPTIONS



ON-SITE SURVEY INSTRUMENT

INTERNATIONAL RESOURCE BASE/NETWORK SURVEY

A. ORGANIZATIONAL DESCRIPTORS

1. Name of Organization _____

2. Street Address _____

3. Mailing Address _____

4. Telephone number _____ Telex _____

5. Name of person interviewed _____

6. Title _____

7. Continent

- North America
- Central America/Mexico/ Caribbean
- South America
- Europe
- West Africa/Sahel/North Africa
- Central Africa
- Southern/Eastern Africa
- West Asia/Middle East/Indian sub-continent
- Southeast Asia/Pacific Islands

8. Is the organization:

- Public
- Private
- For-profit
- Non-profit

9. Goals of the organization (attach a statement from the organization if available)

Page 2.

10. Is the organization involved in:

- High level technology
 Medium level technology
 Low level technology

11. Categories of organizations (use the definition list)

- Transfer Agent
 End User
 Facilitator
 Research and Development Institute
 Sponsor

12. Organizational Activities

Technical Assistance

- Management/Administration advice
 Extension/Training/Education
 Financial Assistance
 Provide documentation/answer inquiries
 Library services
 Provide consulting services
 Product Research and Development
 Marketing Assistance
 Other Specify _____

Implementation Activities

- Product design and modification
 Community organization/Cooperative development
 Marketing
 Community services
 Other Specify _____

Does your organization charge for its services? Yes No

Of the above categories, which are most important, in terms of your current situation

Of these categories, which areas seem likely to be more important in the future

13. In which of the following broad subject areas do your activities fall?

- | | |
|---|--|
| <input type="checkbox"/> Education/Communication | <input type="checkbox"/> Housing/Construction |
| <input type="checkbox"/> Public Health and Medicine | <input type="checkbox"/> Agriculture |
| <input type="checkbox"/> Home technology/Crafts | <input type="checkbox"/> Water Supply/Public Works |
| <input type="checkbox"/> Industry/Labor | <input type="checkbox"/> Renewable Energy |
| <input type="checkbox"/> Population/Family Planning | <input type="checkbox"/> Non-renewable energy |
| <input type="checkbox"/> Nutrition | <input type="checkbox"/> Other Specify _____ |

Page 3.

14. Organizational Clientele

	Urban	Rural	Low Income
Industries			
Small Businesses/Cottage Ind.			
Community Associations			
Government Institutions			
Educational Institutions			
Other (specify)			

	Estimated # Served	Projected # Served	# Low income served
Farmers			
Industrial Workers			
Managers			
Extension Workers			
Information Specialists			
Students			
Faculty Membars			
Researchers			
Engineers			
Other (specify)			

15. INTERVIEWER QUESTION/ASSESSMENT

Indicate what type of organization you think this organization is

- Transfer Agent
- End User
- Facilitator
- Research and Development Institute
- Sponsor

16. Estimated, total annual budget for 1979

- \$0 - \$10,000
- \$10,000 - \$100,000
- \$100,000 - \$500,000
- \$500,000 - \$1,000,000
- More than \$1,000,000

Current largest funding source _____

17. Number of staff in following activities

- Management/Administration/Financial
- Documentation/Inquiry Response

- Interpersonal Extension/ raining/Technical Assistance
- Clerical
- Other specify _____

How many are in the field? _____

Do you have people outside of your organization who donate their time or who can be called on to give technical assistance to your program free-of-charge or for a nominal fee only?

Yes No If yes, how many _____

Is their potential for more involvement of this type of person in your programs at some point?

Yes No

If yes, in what areas do you see this growing invlovement? _____

18. Linkages

Does your organization have on-going, regular contact with "transfer agents"?

Yes No If yes, which ones? _____

Does your organization have on-going, regular contact with "end users"?

Yes No If yes, which ones? _____

Does your organization have on-going, regular contact with "facilitators"?

Yes No If yes, which ones? _____

Does your organization have on-going, regular contact with "research and development instituites"?

Yes No If yes, which ones? _____

Does your organization have on-going, regular contact with "sponsors"?

Yes No if yes, which ones? _____

Page 5.

Characterize the nature of these relationships by checking the appropriate box

	Transfer Agent	End User	Fac.	R & D	Spon
Keeping informed through regular channels					
On-going or as needed exchange of organization resources					
Joint Program Activity					
Members of the same consortium					
Commercial relationship					
Funder/Grantee					
Other					

19. Organizational Strengths and Needs

	Strong	Need	explanation of need	not relevant
Staff size				
Training of staff				
Financial resources				
Physical facilities				
Access to tools and hardware				
Linkages with similar orgs.				
Linkages with other kinds of orgs.				
Access to technical experts				
Access to technical information				
Access to other funding sources				
Other (specify)				
Other (specify)				

20. Miscellaneous questions

Does your organization have a documentation center?

Yes No Planning stages

If yes, how many documents are in it? _____

Estimate the number of new additions per year (establish a growth rate) _____

Does your organization have the capability to translate information from one language to another?

Yes No Planning stages

Does your organization produce information for "end users"?

Yes No

If yes, answer the following questions, please

Indicate the type of print media used, the quantity, and the target audience

	Quantity	Target audience
Newsletter	_____ / distributed per yr.	_____
Brochures	_____ / distributed per yr.	_____
How-to publications	_____ / distributed per yr.	_____
Other (specify)	_____ / distributed per yr.	_____

Indicate the type of media used, the subject matter, and the target audience.

	Subject matter	Target audience
Posters	_____ _____ _____	_____ _____ _____
Flip charts	_____ _____ _____	_____ _____ _____
Radio spots	_____ _____ _____	_____ _____ _____
Slides/Film strips	_____ _____ _____	_____ _____ _____
Movies	_____ _____ _____	_____ _____ _____
Other (specify _____)	_____ _____ _____	_____ _____ _____

How do your organization disseminate this information?

- Mailing list (number on the list _____)
- Hand outs (number distributed in 1978 _____)
- Delivery system _____
- Other specify _____

Indicate the types and number of staff people involved in the production of this information for the end user

- Trained writer _____
- Artist _____

Page 7.

Does your organization have a program that reviews the technical information that it receives and disseminates?

Yes No Planning stages

If yes, please describe the program _____

Has your organization computerized any part of its operations?

Yes No Planning stages

If yes, which part(s) are computerized? _____

Does your organization intend to develop an inquiry response system, as part of its major purposes?

Yes No Planning stages

INTERVIEWER: If this organization has a documentation center with at least 1,500 documents (question 20), and one of the following two criteria, fill out the supplemental data base survey.

- a. the present capability to receive, refine, and disseminate information OR
- b. the intent to develop an inquiry response system

SECTION 3 - INFORMATION USE AND NEEDS

1. Types of in-house resources

- Technical expertise
- Publications (i.e. published literature)
- Technical documents (e.g. blueprints)
- Reports from other organizations
- Demographic/statistical data
- Geographic data
- Information about funding sources
- Economic/marketing studies
- Audio-visual aids
- Other specify _____

2. Types of resources used from outside sources

- Specialized technical expertise
- Publications
- Technical documents
- Reports/advice from other organizations
- Demographic/statistical data

Page 8.

- Information about funding sources
- Economic/marketing studies
- Audio-visual aids
- Other specify _____

3. Sources of outside resources

- | | Major
source | Minor
source |
|---|-----------------|-----------------|
| <u>Orgs. with a local, or multi-state area</u> | | |
| <u>Orgs. operating on a national basis (e.g. Ministry of Ag.)</u> | | |
| <u>Orgs. operating on a regional basis (e.g. OAS)</u> | | |
| <u>Orgs. operating on an global basis (e.g. WHO)</u> | | |
| <u>Orgs. with similar purposes as yours</u> | | |

Are you familiar with on-line data bases Yes No

If yes, which ones? _____

Do you use these data bases? Yes No

If yes, which ones? _____

Which, of all of these sources, is the most important to you at this time?

4. Problems

- Contact is infrequent/irregular
- The information takes too long to get once we request it
- It is often difficult to identify who has what resources
- The cost for the information is too high
- The information that we receive is too complex
- The information that we receive is not translated into our language
- Too much information is supplied
- The information is not clearly explained
- The information that we need is proprietary and unavailable
- The information is not technically accurate
- The information has not been tested
- Other specify _____

5. Positive Aspects

- Regular contact
- Clear explanation of resources available
- Fast turnaround times/responsive
- Information is reasonably costed
- A range of possibilities is presented
- The information is refined appropriately for our use
- The information is in our language
- Other specify _____

Page 9.

Have any of the problems been so bad that you have decided not to use one of the sources any more

Yes No

If yes, write in which source and the most troublesome problem

Source	Problem
_____	_____
_____	_____

6. Resource needs and wants

- Technical experts for advice and training
- Publications
- Up-to-date technical documents
- Having specific questions answered by mail
- Knowing the experiences of projects engaged in similar activities
- Knowing what agencies fund what types of activities
- Demographic/statistical projections
- Geographic data
- Marketing assistance
- Other specify _____

7. What kind of organization would best be able to provide you with these outside resources? (indicate the top two)

- Organizations that have a local, or multi-state area
- Organizations that operate on a national level
- Organizations that serve a regional area
- Organizations that operate on an global basis
- Technical information networks

8. Additional internal resources needed

- No, we already have the capability to handle any expansion
- We would need additional funding (estimate how much _____)
- We would need additional staff (indicate how many and type _____)
- We would need additional physical space (estimate how much _____)
- We would need a computer _____
- We would need office equipment (what type _____)
- We would need communications equipment (e.g. mimeograph, offset press, etc. _____)
- Other specify _____

Page 10.

SECTION C - BENEFITS AND CONTRIBUTIONS

1. Types of benefits from participating in the Resource Base/Network

- No benefit
- An "advertising" of your organization's services
- An "advertising" of your organization's project(s)
- Access to technical consultation
- Access to the latest technical information
- Knowledge of potential sponsors
- Reimbursement for services
- Publications
- Other specify _____

2. Services that can be offered to the network

- None
- Personnel to assist other organizations (e.g. management consulting)
- Description of your services/updates, so that other organizations know what you're doing
- Information about funding sources, so other organizations can know what agency is sponsoring what types of activities
- Funds to operate the system
- Staff to maintain the system at your end
- Your publications
- Training of other people and organizations
- Other specify _____

3. Characteristics conditional upon participation

- None
- Access must be open to everyone
- Access for only certain groups specify which groups _____
- Access must be excluded to certain groups specify which groups _____
- Must have priority access
- The service must be free
- The service must be reasonably costed
- We must be reimbursed for what we put into the network
- We must have minimum bother
- The information must be confidential, until specifically released
- Other specify _____

4. What is your assessment of this proposed network

- Excellent idea
- Good idea
- Fair idea
- Bad idea

Page 11.

5. Are you interested in participating in the Network

- Very interested
- Somewhat interested/want more details
- Not interested

SECTION D - RECOMMENDATIONS

1. Preferred Structure

- One central Resource Base, linked to affiliates
- A series of regional Resource Bases, linked together and to their affiliates
- A series of national Resource bases, linked together and to their affiliates

2. Potential candidates

- Central _____
- Regional _____
- National _____

3. Preferred locations

- Central _____
- Regional _____
- National _____

4. Next Steps/Potential Problems

INTERVIEWER SECTION
ASSESSMENTS, COMMENTS, NOTES

ON-SITE DATA BASE SURVEY INSTRUMENT

SUPPLEMENTAL SURVEY
DATA BASES/ INFORMATION RESOURCES

1. How many inquiries are handled in a year? _____
2. How many pieces of information (a.g. documents, publications, manuals, bibliographies, etc.) are contained in the documentation center or data base?

Do you have:

- Bibliographies/abstracts only
 Actual documents
 Both (abstracts and documents)

3. Is the data base/information resources computerized?

Totally Partially No Planned

4. Types, quantity (or percent) and percentage of original information

	# (or %)	% of original information
Education/Communication		
Public Health and Medicine		
Home technology/Crafts		
Industry/Labor		
Population/Family planning		
Nutrition		
Housing/Construction		
Agriculture		
Water supply/Public Works		
Renewable Energy		
Non-renewable energy		
Other Specify		

Estimated percentage of original information _____ %

5. In what language is the major part of your collection? _____

What other languages is your collection in? _____

6. In what languages do your requestors want the information? _____

7. Do you charge to search your data base? Yes No Planned

If yes, how much do you charge? _____

Page 2.

8. What is your estimated, average turnaround time in answering a request for assistance or information?

9. Is a classification system or thesaurus used to organize the data or input to the computer

Yes No

If yes, attach a copy or describe the system _____

10. What are the sources of information for your data base

	Major	Minor
In-country government institutions		
Foreign government institutions		
Research Institutes/ Universities		
Field or case studies/Programs/Projects		
Other Information Networks		
Original (in-house)		
Other specify		

11. What type of format is the documentation/information kept in?

- Microfilm
- Microfiche
- Books
- Correspondence
- Articles
- Original Drawings
- Other specify _____

12. Is there a document reproduction capability (e.g. Xerox)

Yes No Planned

13. Is there a card catalog system?

Yes No Planned

If yes, are the cards arranged by?

- Author, title, etc.
- Subject
- Both

Page 3.

Describe or attach the classification system _____

FOR COMPUTER SYSTEM ONLY

14. Is there a standard input form?

Yes No

If yes, please attach the form

If no, describe how the information is entered _____

15. Is the information entered via

Key punch card
 Key to tape (if yes, enter the bytes per inch _____)
 Key to disc (if yes, enter either Floppy _____ or Hard _____)
 CRT
 OCR

16. Specify which type of computer the organization uses

17. Does the organization own its computer

Yes No Planning

18. Is an "intelligent" (interactive) terminal used?

Yes No Planning

19. Type of computer language used

FORTRAN
 PL-1
 COBOL
 BASIC
 JPL
 Assembly
 Other specify _____

Page 4.

20. Describe the retrieval capability of the system

- Key words linked together
- Free text
- By any one of the data elements (e.g. author, date of publication, etc.)
specify which data elements

NOTES

INTERNATIONAL RESOURCE BASE/NETWORK SURVEY

A. ORGANIZATIONAL DESCRIPTORS

- 1. Name of Organization _____
- 2. Street Address _____
- 3. Mailing Address _____
- 4. Telephone number _____ Telex _____
- 5. Name of person filling out survey _____ 6. Title _____

7. For the purpose of this study, we've identified some major categories or types of organizations. One organization may, of course, fall into more than one category. Please review the enclosed "Definitions" sheet. In your view, your organization, as it works to carry out its purposes, falls into which categories?

- Transfer Agents
- End User
- Facilitator
- Research and Development Institute
- Sponsor

8. In the course of working to meet your goals, which of the following kinds of activities does your organization provide?

Technical Assistance (services provided to other organizations)

- Management/Administration advice
- Extension/Training/Education
- Financial Assistance
- Provide documentation/answer inquiries
- Library services
- Provide consulting services
- Product Research and Development
- Marketing Assistance
- Other Specify _____

BEST AVAILABLE COPY

Implementation Activities (your own implementation activities)

- Product design and modification
- Community organization/Cooperative development
- Marketing
- Community services
- Other Specify _____

9. In which of the following broad subject areas do your activities fall?

- | | |
|---|--|
| <input type="checkbox"/> Education/Communication | <input type="checkbox"/> Housing/Construction |
| <input type="checkbox"/> Public Health and Medicine | <input type="checkbox"/> Agriculture |
| <input type="checkbox"/> Home technology/Crafts | <input type="checkbox"/> Water Supply/Public works |
| <input type="checkbox"/> Industry/Labor | <input type="checkbox"/> Renewable Energy |
| <input type="checkbox"/> Population/Family planning | <input type="checkbox"/> Non-renewable energy |
| <input type="checkbox"/> Recreation | <input type="checkbox"/> Other Specify _____ |

10. Please provide a list of your full-time staff _____

10. The following series of factors often affect organizations. These factors may or may not be relevant to your organization. If the factor is relevant, please indicate whether, in your opinion, the factor is one of your organization's strengths or is an area where more resources are needed. Please explain exactly what is needed.

Organizational Strengths and Needs

	Strong	Need	Explain Need	not relevant
Staff size				
Training of staff				
Financial resources				
Physical facilities				
Access to tools and hardware				
Linkages with similar orgs.				
Linkages with other kinds of orgs.				
Access to technical experts				
Access to technical information				
Access to technical information				
Access to other funding sources				
Other (specify)				
Other (specify)				

Further explanation of needs: _____

11. Does your organization have a documentation center?

_____ Yes _____ No _____ Planning stages _____

If yes, how many documents are in it? _____

Estimate the number of new additions per year (establish a growth rate) _____

12. Does your organization have the capability to translate information from one language to another?

_____ Yes _____ No _____ Planning stages _____

If yes, which languages? _____

SECTION B - INFORMATION USE AND NEEDS

An organization uses many different kinds of resources in carrying out its goals. Some of these resources are information, such as documents, reports from other organizations, periodicals, etc. Other kinds of resources that organizations use are consultants, or expert technical advice, such documents as blueprints, audiovisual aids, etc. This section of the survey will look at the types of resources that your organization is currently using, the sources of these resources, the types of resources that you need but are not using, and what modifications you might have to make to accommodate using these new resources.

1. In working to meet your goals, what types of resource and information do you presently have within your own organization, i. e., you are able to supply yourself?

Types of in-house resources

- Technical expertise
- Publications (i.e. published literature)
- Technical documents (e.g. blueprints)
- Reports from other organizations
- Demographic/statistical data
- Geographic data
- Information about funding sources
- Economic/marketing studies
- Audio-visual aids
- Other specify _____

2. Those resources above are the resources that you are able to supply yourself. We realize that in carrying out your programs, you often use a combination of resources, sometimes from inside your organization and sometimes you have to go outside your organization, to supplement your own efforts. What types of resources are you using from outside your organization to help you carry out your program?

Types of resources used from outside sources

- Specialized technical expertise
- Publications
- Technical documents
- Reports/advice from other organizations
- Demographic/statistical data
- Geographic data
- Information about funding sources
- Economic/marketing studies
- Audio-visual aids
- Other specify _____

3. What types of organizations are supplying you with these outside resources?

- Organizations that have a local, or multi-state area
- Organizations that operate on a national basis (e.g., U. S. Ag. Dept.)
- Organizations that have a regional basis (e.g., OAS)
- Organizations that are operating on a global basis (e.g., UN agencies)
- Other organizations carrying out the same purpose as your organization
- Technical information networks (e.g., NTIS)

4. Often, organizations find that working with outside sources is too difficult because of a number of problems. Because of these problems, many organizations either build their own internal capability, or decide to forego searching these outside sources. In your opinion, what have been the problems that you have encountered in dealing with these outside sources of information or resources?

- Contact is infrequent/irregular
- The information takes too long to get once we request it
- It is often difficult to identify who has what resources
- The cost for the information is too high
- The information that we receive is too complex
- The information that we receive is not translated into our language
- Too much information is supplied

- The information is not clearly explained
- The information that we need is proprietary and unavailable
- The information is not technically accurate
- Other specify _____

5. What have been the positive aspects of dealing with these sources?

- Regular contact
- Clear explanation of resource available
- Fast turnaround times/responsive
- Information is reasonably costed
- A range of possibilities is presented
- The information is refined appropriately for our use
- The information is on our language
- Other specify _____

6. Assuming that you could have access to a very wide range of information and resources, which, in your opinion, would you use to help you in better meeting your goals?

- Technical experts for advice and training
- Publications
- Up-to-date technical documents
- Having specific questions answered by mail
- Knowing the experiences of projects engaged in similar activities
- Knowing what agencies fund what types of activities
- Demographic/statistical projections
- Geographic data
- Marketing assistance
- Other specify _____

(Special Question: if you are, or work directly with an "End User", please answer this question) In what form would you like to receive this information

- Correspondance
- Simple manuals
- Illustrated Books
- On-Site instruction
- Other specify _____

7. What kind of organization would best be able to provide you with these outside resources? (indicate the top two)

- Organizations that have a local, or multi-state area
- Organizations that operate on a national level
- Organizations that operate on a regional basis
- Organizations that operate on an global basis
- Technical information networks

8. Certainly, if the resources that you wanted were available, it would affect your program activity. They would allow you to carry out your programs more effectively. Of course, if you could carry out your programs more effectively, you might be able to expand your programs or find that because of your ability, other organizations would seek you out. Would you need additional internal resources to expand your activities?

Additional internal resources needed

- No, we already have the capability to handle any expansion
- We would need additional funding (estimate how much _____)
- We would need additional staff (indicate how many and type _____)
- We would need additional physical space (estimate how much _____)
- We would need a computer
- We would need office equipment (what type _____)
- We would need communications equipment (e.g. mimeograph, offset press, etc. _____)
- Other specify _____

SECTION C - BENEFITS

At this point, we want to thank you for taking the time to describe your organization in such detail. We think that we now have a fairly good idea of your organization, its resources that it has on hand, that it needs, and your assessment of the types of problems that you are encountering.

1. What kind of benefits do you think you might get if you participate in the resource base? would you get:

- No benefits
- An "advertising" of your organization's services
- An "advertising" of your organization's project(s)
- Access to technical consultation
- Access to the latest technical information
- Access to other people's experiences
- Knowledge of potential sponsors
- Reimbursement for services
- Publications
- Other specify _____

2. What kinds of services do you think you might be able to offer the Resource Base?

- None
- Personnel to assist other organizations (e.g. management consulting)
- Description of your services/updates, so that other organizations know what you are doing
- Information about funding sources, so other organizations can know what agency is sponsoring what types of activities
- Funds to operate the system
- Staff to maintain the system at your end
- Your publications
- Training of other people and organizations
- Other specify _____

3. What characteristics might you put upon your participation in the Resource Base?

- None
- Access must be open to everyone
- Access for only certain groups specify which groups _____
- Access must be excluded to certain groups. Specify which groups _____
- Must have priority access
- The service must be free
- The service must be reasonably costed

- We must be reimbursed for what we put into the network
 We must have minimum bother
 The information must be confidential, until specifically released
 Other specify _____

SECTION D - RECOMMENDATIONS

We have now gone through descriptions of your organization, its present organization and its current and projected resource use. Now, we'd like to ask you for your thoughts and recommendations on possible structure and operating practices for a Resource Base Network

1. Given that support would be available, in your opinion, which option(s) listed below seems most workable; that is, which appear to have the most chance of success?

- One central Resource Base, linked directly to key regional Resource Bases, in turn linked to their own affiliated smaller groups and networks.
 A series of regional resource bases which are linked to national affiliates, in turn linked to their own affiliated smaller groups and networks
 National Resources Bases, operating through local affiliated smaller groups and networks
 Another structure _____

2. Based on your answer to Question A., can you identify potential central, regional, national, or local Resource Base candidates?

- No
 Central candidate _____
 Regional candidate _____
 National candidate _____

3. Based on your answer to question A., where would you recommend the Resource Base be established

- We can't recommend at this point
 Central Base _____
 Regional Base _____
 National Base _____

4. You have identified the structure, candidates, and location for a Resource Base. You have also identified your specific needs and incentives to participate in the Resource Base network. In your opinion, what should be the next step(s) in implementing such a Resource Base, and what might be the problems?

Please add your comments on this entire effort and anything else you wish to comment on

3706 Rhode Island Avenue
Mt. Rainier, Maryland, USA 20822
301-277-7000
Telex—440192 VITA UI
Cable—VITA INC

We Need the following:

1. Any scientific or technical information as it relates to small scale labor-intensive, locally-maintained applications.

___ YES ___ NO

Please Describe : _____

2. Any development-oriented scientific and technical information, suitable for developing country applications, e.g. rural development, sanitation engineering, nutrition, etc.

___ YES ___ NO

Please Describe: _____

3. Any technology oriented information using renewable resources such as solar energy, wind power, etc. in any field such as agriculture, biochemistry, energy, health, education, etc.

___ YES ___ NO

Please Describe: _____

APPENDIX 5: SURVEY INSTRUMENTS

AMERICAN GEOLOGICAL INSTITUTE (AGI)
GEOLOGICAL REFERENCE FILE (GeoRef)
3205 Leesburg Pike
Falls Church, VA 22041
John Mulvihill, Manager

Phone: (703) 379-2480
Founded: 1970

STAFF: 22 Total.

RELATED ORGANIZATIONS: Services are provided with the cooperation of the Geological Society of America.

DESCRIPTION OF SYSTEM OR SERVICE: The GEOLOGICAL REFERENCE FILE (GeoRef) is a computer-readable data base of references to geosciences information in North American literature since 1961, and in world literature since 1967. Searchable online through the System Development Corporation, GeoRef is also used for the production of annual indexes to a number of journals, as well as for the preparation and photocomposition of special bibliographies.

SCOPE AND/OR SUBJECT MATTER: Earth sciences, including geochemistry, geochronology, paleontology, stratigraphy, and structural geology.

INPUT SOURCES: Published literature from more than 3000 serials in 35 languages; also books, reports, theses, and maps.

HOLDINGS AND STORAGE MEDIA: Over 300,000 citations are held on magnetic tape in UNISIST standard format.

PUBLICATIONS: 1) Bibliography and Index of Geology (monthly with annual cumulations)—produced for the Geological Society of America; 2) Bibliography and Index of Micropaleontology (monthly)—produced for the American Museum of Natural History, New York. Other publications include topical listings of current worldwide references, yearly indexes for 13 geosciences journals, and various bibliographies.

COMPUTER-BASED PRODUCTS AND SERVICES: In addition to being available through the System Development Corporation, GeoRef is also offered by the American Geological Institute for demand retrospective searches, SDI services, and tape copies.

OTHER SERVICES: Primary services are abstracting and indexing, computerized searching, and compilation of special bibliographies.

CLIENTELE/AVAILABILITY: Services are available to public, with restrictions on distribution of GeoRef searches to third parties.

CONTACT: John Mulvihill, Manager, GeoRef.

AMERICAN SOCIETY FOR METALS (ASM)
METALS INFORMATION

Metals Park, OH 44073
H. David Chafe, Director

Phone: (216) 333-5151
Founded: 1944

STAFF: 8 information and library professional; 6 clerical and non-professional.

RELATED ORGANIZATIONS: Some of the publications of METALS INFORMATION are sponsored jointly by The Metals Society, London. In addition, World Aluminum Abstracts are published for the Aluminum Association; the European Primary Aluminum Association (EPA), Dusseldorf, West Germany; Aluminum Development Council (ADC), Sydney, Australia; and the Japan Light Metal Association (JLMA), Tokyo, Japan.

DESCRIPTION OF SYSTEM OR SERVICE: METALS INFORMATION publishes abstracting and indexing journals covering material of importance to people involved in metals and metalworking. In addition, METALS INFORMATION provides online information retrieval, computer-produced bibliographies, digests, and other related services in an effort to consolidate all current and retrospective information on metals technology and related subjects.

SCOPE AND/OR SUBJECT MATTER: Materials science, metals and metallurgy - from ore production (excluding mining) through refining; forming and fabrication, physics and chemistry, properties, and uses of metals; general science and engineering.

INPUT SOURCES: Books, periodicals, symposia, seminars, reports, translations, and other published literature in relevant fields; government reports and patents are also searched for references to aluminum technology. Over 2500 references are added to the data base each month.

HOLDINGS AND STORAGE MEDIA: Library collection contains 9000 volumes and 1200 journal subscriptions. The data base covers 12 years and includes over 300,000 documents from 43 different countries.

PUBLICATIONS: 1) Metals Abstracts (monthly, with annual collations) - published jointly with The Metals Society, London, it includes over 30,000 abstracts annually. 2) Metals Abstracts Index (monthly, with annual cumulations) - computer-generated index includes an author index, extensive subject indexing and cross-references; it is co-published with The Metals Society, London. 3) Alloys Index (monthly, with annual cumulations) - published jointly with The Metals Society, London; the citations include title, author, source (journal or conference), volume number, pages, language, Metals Abstracts serial number, and Metals Abstracts Index descriptors. 4) ASM Translations Index (quarterly) - offers computer-generated source and author indexes to all translations held by the Translation Service. 5) World Aluminum Abstracts (WAA) (monthly, with annual bound volumes) - covers over 1600 publications with technical literature on aluminum; it is also available on magnetic tape. 6) ASM Bibliographies - computer-generated bibliographies; list with prices available on request. 7) ASM Thesaurus of Metallurgical Terms, 2nd ed., 1976 - designed to provide vocabulary control for ASM's abstracting and indexing services. 8) ASM Digest Series (monthly) - nine individual digests are produced; each reproduces complete abstracts on the specific topic of interest, as published in Metals Abstracts; the individual names are: Metal-forming Digest; Heat Processing Digest; Cleaning/Finishing/Coating Digest; Welding-Joining Digest; Casting Digest; Titanium Digest; Stainless Steels Digest; Testing & Control Digest; Corrosion Prevention/Protection Digest.

MICROFORM PRODUCTS AND SERVICES: Microreproduction for internal use only.

COMPUTER-BASED PRODUCTS AND SERVICES: METADEX (which includes Metals Abstracts Index and Alloys Index) and World Aluminum Abstracts are both available for online current and retrospective searching through ASM, Lockheed/DIALOG, and QL Systems (Canada). Both are also available on magnetic tape for leasing. In addition the ASM Digest Series, the ASM Translations Index, and the ASM Bibliographies are all computer-produced. METALS INFORMATION also offers METALERT, a monthly computer-generated current awareness service; monthly input to ASM's computerized data base is classified into 91 subject categories, and subscribers may select any number of categories.

OTHER SERVICES: Abstracting, indexing, publishing, and computer searching as described; interlibrary loan; photocopying; and translation distribution service.

CLIENTELE/AVAILABILITY: Service and publications are available by fee or subscription; republication of material is prohibited.

REMARKS: See also ALUMINUM ASSOCIATION - WORLD ALUMINUM ABSTRACTS.

CONTACT: H. David Chafe, Director, Metals Information.

CENTRO LATINOAMERICANO DE DEMOGRAFIA

DOCPAL
LATIN AMERICAN POPULATION DOCUMENTATION SYSTEM

The Latin American Population Documentation System (DOCPAL) was created by the Latin American Demographic Centre (CELADE) of the United Nations in March 1976^{1/} as a permanent regional documentation system with the following long-term goals:

1. To enable the countries of the region^{2/} to maximize the use of population information^{3/} of relevance for economic and social development, by helping to improve the flow of such data taking into consideration the different characteristics and needs of the institutions in the countries.
2. To improve the flow of information between Latin America and the rest of the world by taking part in the development of the World Population Information Network (POPIN).

Following these lines, in its FOUNDATION BUILDING PHASE (March 1976-February 1979) DOCPAL performed the activities and services which are summarized below:

1. Organization in CELADE of a document information processing unit.
2. Establishment of a computerized data base which currently contains information on 8,000 bibliographical units and whose volume grows with the monthly entry of 250 to 300 documents.
3. Organization and provision of three services at the regional level:
 - a) DOCPAL Resúmenes sobre Población en América Latina (Latin American Population Abstracts), a periodical which is published twice a year (June and December) and each issue of which contains between 500 and 700 summaries of population documents. A Cumulative Index to the issues already published will be brought out every two years; that covering volumes 1 and 2 (1977-1978) is already in the press.
 - b) Specialized bibliographies based on computer searches.
 - c) Clearinghouse services.
4. Participation in the design of the World Population Information Network (POPIN) and in the POPIN Multilingual Population Thesaurus.

The following objectives are envisaged for DOCPAL in its SECOND PHASE (March 1979-):):

1. To co-operate, in a limited number of countries of the region, with institutions which work in the population field and want to improve their organization in order to offer their users a wider range of services and be included in systems with a broader coverage.
2. To identify and strengthen a group of centres operating at the national level which could become Participating Centres of DOCPAL.
3. To prepare teaching materials (manuals, guides, etc.) so that centres in the region can take advantage of DOCPAL's experience and technology. Special emphasis will be placed on the adaptation of suitable techniques for centres which process information manually.
4. To maintain and improve both the regional-level services that have already been organized, and computerized procedures currently in use.
5. To organize courses for the teaching of DOCPAL methodologies to centres working in the population field.
6. To participate in the development of the World Population Information Network (POPIN) whose establishment was recently approved by the United Nations Population Commission.

^{1/} For example, PIOSA (Population Information and Documentation System for Africa), whose organization is based on DOCPAL's experience.

FOR MORE INFORMATION ABOUT DOCPAL
AND ITS SERVICES, CONTACT:

Centro Latinoamericano de Demografía (CELADE)
DOCPAL
Casilla 41
Santiago - Chile

FOREST PRODUCTS RESEARCH SOCIETY
ABSTRACT INFORMATION DIGEST SERVICE (AIDS)
2801 Marshall Court Phone: (609) 231-1361
Madison, WI 53705 Founded: 1974
Arthur S. Brauner
Executive Vice President

STAFF: 2 Information and library professional; 1 technician; 1 clerical and nonprofessional.

RELATED ORGANIZATIONS: The Abstract Information Digest Service was established with the cooperation of the Southern Forest Experiment Station of the U.S. Forest Service.

DESCRIPTION OF SYSTEM OR SERVICE: The ABSTRACT INFORMATION DIGEST SERVICE (AIDS) is a computer-based microfiche information system designed to provide the forest products industry with an accurate and economical means of retrieving important data. The SERVICE systematically scans worldwide literature published by all segments of the industry and prepares a detailed, single-page abstract for each article selected; the abstracts are made available in microfiche format. The SERVICE also prepares citations for each article abstracted, including bibliographic information and index keywords; the citations are stored on computer where they are available for searching, and are also issued in microfiche, sorted by subject via COM.

SCOPE AND/OR SUBJECT MATTER: All aspects of forest products, from timber production through finished products, including financial management, production processes, and fundamental sciences. Not included is chemical pulp, which is covered by the services of the Institute of Paper Chemistry.

INPUT SOURCES: Approximately 2000 new entries per year are selected from over 400 worldwide sources including technical journals, trade publications, lab reports, patents, abstract bulletins, separates, proceedings, and books.

MICROFORM PRODUCTS AND SERVICES: The basic AIDS microform package includes the complete file of single-page abstracts (on 4x6 microfiche cards, with each card holding 60 pages) and microfiche of the citation listings, sorted by subject; this package is updated semi-annually.

COMPUTER-BASED PRODUCTS AND SERVICES: The AIDS citation listings data base includes the following data elements in each citation: author, date, title, reference source, subject areas, numbers of literature cited, tables and illustrations, keywords, species, and author affiliation. Means of access to the base are: 1) in-house searches by AIDS, with output coming as printout after seven to ten days; 2) leasing the magnetic tape; and 3) online searches through the Madison Academic Computing Center at the University of Wisconsin.

OTHER SERVICES: In addition to its micrographic and computer-based services, the SERVICE also performs manual literature searches and makes referrals.

CLIENTELE/AVAILABILITY: Computer searches are available without restriction; other services available only with a subscription to AIDS. There are several different classes of subscriptions, involving leases of various combinations of microfiche and/or magnetic tapes.

CONTACT: Joni M. Hermanson, Coordinator, Abstract Information Digest Service.

GEORGIA INSTITUTE OF TECHNOLOGY
 PRICE GILBERT MEMORIAL LIBRARY
 INFORMATION EXCHANGE CENTER (IEC)
 Atlanta, GA 30332 Phone: (404) 894-4511
 Ruth Hale, Head Founded: 1971

STAFF: 6 Information and library professional; 4 clerical and nonprofessional.

DESCRIPTION OF SYSTEM OR SERVICE: The INFORMATION EXCHANGE CENTER (IEC) provides bibliographic assistance to business, industry, and government. It conducts current and retrospective literature searches; provides reference and referral services; locates and acquires items in other libraries; furnishes directory and translation services; and lends its materials to business and industrial libraries. IEC, in collaboration with the Reference Department of the Library, can also provide computer-based current awareness or retrospective literature searches. In addition, IEC can conduct manual searches tailored to the specific needs of each organization.

SCOPE AND/OR SUBJECT MATTER: All areas of science and technology except medicine and agriculture.

INPUT SOURCES: Published and unpublished scientific and technical literature; U.S. and foreign patents; maps and aerial photographs; government documents; conference and symposia proceedings.

HOLDINGS AND STORAGE MEDIA: The Library has extensive collections of scientific and engineering resources, including abstracts, indexes, and bibliographies, technical reports from NASA, DOE, and other federal government agencies. It is also a depository for maps issued by the U.S. Topographic Command and by the U.S. Geological Survey, and for publications distributed by the U.S. Government Printing Office. The collection includes over 1,500,000 patents; standards and specifications; over 378,000 bound volumes; approximately 1,040,000 items on microtext; subscriptions to some 12,000 serial titles; and approximately 235,000 non-book materials, such as films, pamphlets, pictures, and slides.

PUBLICATIONS: 1) Serials Holdings List (annual); 2) Georgia Tech Abstracts of Theses (annual). Various brochures, newsletters, and bibliographies are issued as needed.

MICROFORM PRODUCTS AND SERVICES: Price Gilbert Memorial Library card catalog is available as microfiche to other libraries; the Library Serials Holdings List is also available as microfiche.

COMPUTER-BASED PRODUCTS AND SERVICES: There are in-house applications for literature searching and current awareness only as described above.

OTHER SERVICES: Services include abstracting and indexing; computer and manual literature searching as described; copying; interlibrary loan; reference, referral, JDI, and microreproduction as described; advisory and consulting services; and translation. IEC participates in the Southeastern Library Network (SOLINET).

CUSTOMER AVAILABILITY: Services are available without restrictions; most are provided on a fee basis.

CONTACT: Ruth C. Hale, Head, Information Exchange Center.

STAFF: 100 information and library professional; 75 management professional; 75 technicians; 100 clerical and nonprofessional.

DESCRIPTION OF SYSTEM OR SERVICE: The INSTITUTE FOR SCIENTIFIC INFORMATION (ISI) provides a number of information retrieval and dissemination services that enable scientists, educators, clinical practitioners, librarians, and other professionals to make effective use of the world's scholarly literature in science, technology, social and behavioral sciences, and the arts and humanities. It maintains a multi-disciplinary data base covering over 6000 journals and offers current awareness and retrospective search services, both through its numerous print publications and through its computer products available online or as magnetic tape. ISI also offers subscribers tear sheets of journal articles with its Original Article Tear Sheet Service (OATS) and provides access to reprints by supplying Request-A-Print forms to be mailed to article authors. Additional and special ISI services include the following: sociometric studies dealing with scientists and scientific literature; customized indexing services for journal publishers; and turn-key installation of computerized information systems including data bases, software, and training of personnel. ISI also conducts seminars and lectures on modern information retrieval methods.

SCOPE AND/OR SUBJECT MATTER: Life sciences; clinical medicine; physical and chemical sciences; agriculture; biology; veterinary science; engineering and technology; social and behavioral sciences; arts and humanities.

INPUT SOURCES: Annual input to the multidisciplinary ISI data base comprises over 750,000 bibliographic entries (articles, editorials, letters, and other items) from more than 6000 professional journals, plus related non-journal sources including multi-authored books and published proceedings in science and technology.

HOLDINGS AND STORAGE MEDIA: Holdings consist of annual accumulations of source journals (at least two copies of each) from 1960 to date; the bibliographic data extracted from these journals and related non-journal sources is maintained on magnetic tape.

PUBLICATIONS: 1) Science Citation Index-SCI (quarterly, with annual cumulations since 1961 and two 5-year cumulations since 1969). 2) Social Sciences Citation Index-SSCI (three times per year, with annual cumulation). 3) Index to Scientific Reviews-ISR (twice yearly with annual cumulation)—multidisciplinary index covering nearly 2600 journals. 4) Current Abstracts of Chemistry & Index Chemicus-CAC&IC (weekly with quarterly and annual cumulations of IC section). 5) Chemical Substructure Index-CSI (monthly with annual cumulation)—an optional microfilm index to CAC&IC, covering over 150,000 new organic compounds yearly. 6) Index to Scientific and Technical Proceedings-ISTP (monthly with semiannual cumulations)—new in 1973, a multidisciplinary index covering about 30,000 published papers from 3000 proceedings in science and technology. 7) Arts and Humanities Citation Index-A&HCI (three times per year, with annual cumulation)—new in 1973; indexes nearly 30,000 substantive items of all types from over 1000 journals. 8) Current Contents-CC (weekly)—issued in the following six editions, each covering about 1000 journals: CC/Life Sciences; CC/Physical and Chemical Sciences; CC/Social and Behavioral Sciences; CC/Clinical Practice; CC/Agriculture, Biology, & Environmental Sciences; CC/Engineering, Technology, & Applied Sciences. Each CC edition contains reproduced tables of contents from the journals it covers, plus Author Address Directory and Weekly Subject Index. 9) Automatic Subject Citation Alert-ASCA (weekly)—an individualized, computer-produced alerting service on user-selected topics, with multidisciplinary coverage of over 3200 journals; distributed as computer printout listing complete bibliographic data for all items retrieved. 10) ASCATOPICS (weekly)—computer-produced alerting service in 400 selected research areas of broad interest. 11) Automatic New Structure Alert-ANSA (monthly)—computerized alerting service locating specified chemical substructures of new organic compounds reported in the literature, covering over 150,000 compounds yearly, with a backfile dating from 1967 covering a million compounds. 12) ISI Who is Publishing in Science-WIPIS (annual)—qualifies names and addresses of nearly 125,000 authors from more than 26,000 organizations in over 150 countries, based on publication in more than 4500 journals; with geographic and organization indexes. 13) Journal Citation Reports-JCR—tool for studying scientific journal literature and the role of journals in communications between scientists.

MICROFORM PRODUCTS AND SERVICES: The Chemical Substructure Index-CSI publication is available on 16mm microfilm.

COMPUTER-BASED PRODUCTS AND SERVICES: ISI issues weekly magnetic tapes of Science Citation Index (containing 400,000 items annually, including records from Current Contents not present in print version of SCI) and Social Sciences Citations Index (containing 70,000 items annually); the tapes can be used for either current awareness or retrospective searching. These two data bases are also available for online searching through ISI's SCISEARCH and SOCIAL SCISEARCH services available from Lockheed/DIALOG. ISI also issues monthly magnetic tapes of Current Abstracts of Chemistry and Index Chemicus, searchable by compound family, substructure, biological activity, application, method of analysis, researcher, journal, and subject index terms. Other computer services offered by ISI include its computer-produced SDI publications.

OTHER SERVICES: Primary services are abstracting and indexing, and computerized search and SDI services; ISI also performs consulting and manual literature searching.

CLIENTELE/AVAILABILITY: Services are available on a subscription basis.

REMARKS: Institute for Scientific Information European Office, 132 High St., Uxbridge, Middlesex, England, phone Uxbridge 3001.

CONTACT: Susan M. Deutsch, Manager, Copy Services, Institute for Scientific Information.

DEVISIS Services

In brief, these are the services the DEVISIS centre will make available to its member countries:

Publications — *Devindex* will be the principal published product of the DEVISIS system: an index to all the items of information reported by the participating countries and merged at the central unit. It will have supporting indexes by subject, geographic location, author, and by report number. *Devindex* (in English, French, and Spanish, and perhaps in Arabic) will facilitate conventional literature searches and selective dissemination of information services on a "manual" basis.

Machine-Readable Files — These improve enormously man's capability to select rapidly and precisely. Many users feel overwhelmed by the vast amount of information that is available for development purposes today: some 100 000 items a year! But the search capabilities of computer-based retrieval systems make it possible to screen out or suppress most of the irrelevant information, to shield the user from "information overload."

The DEVISIS central unit will prepare and distribute magnetic tapes bearing, in machine-readable form, the same information from which *Devindex* is compiled. The format of such information will correspond to internationally agreed standards for the exchange of bibliographic information, to facilitate merging with other machine-readable information files.

From this magnetic-tape base a number of information services are possible. Among these are retrospective search, selective dissemination of information, and recurring bibliographies.

Retrospective Search. It will be possible to search the DEVISIS file retrospectively by subject, author, and geographic and language fields, and even for specific statistical and investment data. For purposes of subject indexing, a specially designed standardized vocabulary will be used, and the same vocabulary will be used in computer searches to obtain a selection relevant to the user's needs.

Current Awareness Services. Services will be made available to users wishing to monitor, over a period of time, developments in a highly specific field. Where the need is more generalized, this service can be expanded to match the interest of a group of subscribers: thus, if groups such as transportation planners, rural development specialists, or investment decision-makers are interested in the experience of all countries in the fields of their special interests, a "recurring bibliography" can be developed for their use.

It will also be possible to merge a selection of machine-readable references

received from DEVISIS with a selection of references received from, say, AGRIS. For example, a participant interested in forestry development may draw from DEVISIS pertinent information related to the social, economic, financial, and management aspects of his project. At the same time, he will receive from AGRIS technical information concerning different species of tropical wood, methods of processing and conservation, utilization of pesticides, etc.

Referral Service — The basic bibliographic services and products of DEVISIS will be derived from the information in "File One," namely the bibliographic records of government and international documents, books, periodical articles, reports, unpublished studies, etc. The DEVISIS central unit will also prepare a "File Two," on which the national centres may build their referral services.

"File Two" will contain descriptive information about sources of development information throughout the world, such as statistical services, information services in particular sectors, registers of ongoing research and development, indexes of equipment manufacturers, specialized magazines, and bulletins. Whereas "File One" is intended to supply references to what particular information exists, "File Two" is intended to help the user locate other sources of specialized information.

The central unit will publish periodic compendia of "File Two" information under the title *Devprofile*, and at the same time will make the information available on magnetic tape to be searched by the national participants. The national DEVISIS centre will use *Devprofile* to refer its users to sources of specialized information throughout the world.

Document Availability — It is most frustrating to hear of a report that would be essential to a project but that is not available locally and whose supplier is unknown. In anticipation of a need to make the full texts of documents available to the user, the DEVISIS Steering Committee has proposed a microfilm back-up service to provide the full texts for some 50 000 nonconventional reports annually. The central unit will make these microfilms, or if desired paper copies derived from them, available to the national DEVISIS centres at cost. Such charges will also be payable in national currency.

90 Queen Street,
Box 8500,
Ottawa, Ontario, Canada
K1G 3H9

Telephone:
(513) 996-2321

STAFF: 30 Total.

RELATED ORGANIZATIONS: INPADOC is owned by the Austrian Government and operated in collaboration with the World Intellectual Property Organization (WIPO).

DESCRIPTION OF SYSTEM OR SERVICE: The objective of the INTERNATIONAL PATENT DOCUMENTATION CENTER (INPADOC) is to compile patent documentation on a worldwide basis and to make it available in comprehensive form to patent offices, industry, and research personnel. Through an international network of cooperative agreements with patent offices and similar organizations, INPADOC receives input from 43 countries which account for 95% of the world's patent documents issued. To handle this massive bibliographic data, INPADOC has devised a special software package and has created the largest computerized patent data base in the world, the INPADOC Data Base (IDB). This data base is used to produce several microfiche information services and publications; chief among these is the INPADOC Patent Gazette, a weekly service that is equivalent to a world patent journal. INPADOC also offers computer searches and weekly magnetic tape services, as well as a copy service for patent documents based on its extensive microfilm patent collection.

SCOPE AND/OR SUBJECT MATTER: Documentation of the world's patent literature, reflecting the current state of technological development and trends.

INPUT SOURCES: About 1 million patent documents are added annually from 43 countries. These documents include published patents, inventors' certificates, and utility certificates, as well as published applications for the same. Input is received either in machine-readable form from patent offices in accordance with a universal read-in program, or from patent journals which are then processed by INPADOC staff.

HOLDINGS AND STORAGE MEDIA: INPADOC's microfilm collection of patents issued by selected countries totals over 30,000 16mm rolls and is continuously updated with films of the latest documents issued. Its computer files contain over 4.5 million patent citations.

PUBLICATIONS: All of INPADOC's publications are available primarily as microform products.

MICROFORM PRODUCTS AND SERVICES: 1) INPADOC Patent Gazette (PG) (weekly)—an international patent gazette published on microfiche and containing the following three services: the SNS (Selected Numerical Service), the SCS (Selected Classification Service), and the SAS (Selected Applicant Service). Each issue covers all patent documents whose bibliographic data were received in the preceding week, and includes available information in INPADOC's data base concerning equivalences (patent family members). The separate services are cumulated quarterly without equivalences; these cumulations constitute the three publications following. 2) Patent Applicant Service—PAS (cumulated quarterly and annually)—a microfiche service identifying patent documents of a selected number of countries as being connected by a common applicant or owner, with listings by applicant; corresponds to PG-SAS discussed above. 3) Patent Classification Service—PCS (cumulated quarterly and annually)—a microfiche service listing patent documents by common International Patent Classification (IPC) symbol; corresponds to PG-SCS. 4) Numerical Data Base Service—NDB (cumulated quarterly and annually)—a microfiche service listing patent documents by their country of publication and their document number; corresponds to PG-SNS. 5) Patent Inventor Service—PIS (cumulated quarterly and annually)—a microfiche service listing documents of a selected number of countries according to name of inventor, with several applications per inventor grouped by IPC symbol. 6) Patent Family Service—PFS (cumulated quarterly and annually)—a microfiche service listing patent documents connected by a common priority claim under the Paris Convention according to the Convention priority country, the priority date, and the priority number. All of the above are available by subscription on 20M microfiche with a 42x reduction ratio and dimensions of 125mm by 125mm. INPADOC also offers 16mm microfilm copies of patents from its collection of over 30,000.

COMPUTER-BASED PRODUCTS AND SERVICES: The INPADOC Data Base (IDB) is the largest computerized patent data base in the world, covering some 3 million patent documents in the current file dating back to 1973 and 1.3 million in the retrospective file covering selected countries for 1958-1972. The following bibliographic data are included for the patent documents of all countries covered: country of publication, kind of document, number of the document, number of the application, filing date of application, date of publication of the document, International Patent Classification (IPC) symbol if present, the country of priority, the number of the application which is the basis of the priority, the date of priority. For some countries the following additional are included: name of inventor, name of owner, name of applicant, title of invention, national classification symbol, other legally related domestic application. INPADOC is constantly engaged in the enlargement of the scope of IDB, with regard both to country coverage and the number of bibliographic data stored for each document. The following services are offered directly from IDB: 1) Individual Request Search Service—provides demand searches for family members, inventor, IPC symbol, or applicant name; requests are usually processed within two days, with delivery in either COM microfiche or paper printout format. 2) Survey Service—provides monthly current awareness in two areas not covered by INPADOC's microfiche information services: stages of publication in the same country, or new family members. 3) Magnetic Tape Service—including the Extended Data Tapes—EDT (weekly), listing basic bibliographic data for all patents published in previous weeks, and INPADOC Family Data Tapes—IFD (weekly), listing EDT data plus the publication data and the numbers of any patent family members in the IDB.

OTHER SERVICES: In addition to its microform and computerized search services, INPADOC offers paper copies of patent documents well as translation of Japanese documents.

CLIENTELE/AVAILABILITY: Most services are available on a subscription basis.

CONTACT: Norbert Fux, Dipl.-Kfm., International Patent Documentation Center.



The International Technical Centre for Rubbers and Plastics

Registered Office: Shawbury Shrewsbury Salop SY4 4NR England
Telephone: Shawbury (0939) 250333 Telex 33134

RUBBER AND PLASTICS INFORMATION ON-LINE

RAPRA ABSTRACTS is now on-line as part of Lockheed's DIALOG Information Retrieval Service and the European Space Agency's Information Retrieval Service (IRS) accessible in the UK through DIALTECH. Our file contains over 100,000 records with abstracts from 1974 to date and is updated fortnightly with approximately 1,000 entries. The database contains academic, technical and economic information to serve the needs of those who work in, or have an interest in, the rubber and plastics industry. Subjects covered include:

- Synthesis and polymerisation
- Natural rubber cultivation
- Raw materials and monomers
- Compounding ingredients
- Processing technology
- Machinery and test equipment
- Economic and commercial information
- Applications of polymers
- Properties and testing
- Toxicity
- Industrial organisation/administration
- Environmental and industrial hazards

The material for RAPRA ABSTRACTS is selected from world-wide sources including literature from Canada, France, Germany, Hungary, Italy, Japan, Russia, Spain, Sweden and USA. Documents scanned and disseminated include periodicals, conference proceedings, preprints, books, trade literature, technical research reports, standards, specifications and government publications. Patents were added to the file at the beginning of 1973 and approximately 300 are included fortnightly.

The following aids are available which are designed to help formulate the search strategy before going on-line.

- RAPRA Classification Code
Key to the systematic classification of polymers, additives, monomers, properties, applications and machinery.
- RAPRA Thesaurus of Subject Terms
Includes polymers, chemicals, applications and properties (computer printout form).
- RAPRA Thesaurus of Trade Names and Company Names (computer printout form).
- Brief scope notes clarifying the tradenames are now being added in order to help the user define the product.
- RAPRA Journals List

Workshops are being held at RAPRA to help users fully exploit the content and facilities of RAPRA ABSTRACTS on-line. These are one-day courses and further details can be obtained from Carole Lee at RAPRA.

For users interested in on-line searching who do not have a terminal, searches can be undertaken at RAPRA on RAPRA ABSTRACTS and other files of interest. Details of other files in which we have searching expertise are given on the back of this leaflet. Request forms for on-line searches are also available on application.

We also offer an advisory service to organisations with an interest in rubbers and plastics who wish to establish their own on-line searching facilities.

A loans and photocopy service is available through RAPRA to non-members on a pre-paid voucher system. Each voucher entitles you to a photocopy of one article. The price per 20 vouchers is £20 and further details may be obtained from:

Miss D.R. Dawson,
Senior Librarian,
RAPRA

RAPRA is also participating in the DIALOG DIALORDER service whereby articles of interest can be selected from the successful on-line search and full text copies of most articles can be ordered immediately via the terminal. Details of this service are also available on request.

POPULATION INFORMATION PROGRAM

Johns Hopkins University assumed responsibility July 1, 1978, for the Population Information Program, formerly operated by the George Washington University Medical Center. The Program is under the direction of Phyllis T. Piotrow, Ph.D., with Helen K. Kolbe, M.S., as Co-Director, and is a part of The Johns Hopkins University Population Center, which is headed by John F. Kantner, Ph.D.

The Hopkins Population Information Program continues to perform the three previous major functions: (1) preparing and distributing Population Reports; (2) collecting and abstracting information for POPLINE, the computerized population information system, and providing POPLINE services to the developing world; and (3) maintaining, up-dating, and expanding an international mailing list of up to 100,000 names and addresses. In addition, the Hopkins Population Information Program will provide training, both in Baltimore and at various developing country centers, in the use of information systems to support population/family planning programs. Operations through 1981 with support from the United States Agency for International Development are now scheduled.

Population Reports informs readers of new developments in fertility management, family planning programs, demographic change, law and social policy, and other areas of international population concern. As a new feature, one or more Population Reports each year deal with other important subjects in international health. The Program prepares and distributes annually 6-10 issues in each of five languages — English, Spanish, French, Portuguese, and Arabic. A full index is provided each year. More than 60 Population Reports have been distributed to date in English. Copies of past reports — many in French, Spanish, Portuguese, and Arabic, as well as in English — are available on request, as are looseleaf notebook binders. Use the order form on the reverse side.

POPLINE, a computerized, online information system, provides citations and abstracts of journal articles, book chapters, published and unpublished reports, government and United Nations documents and other population/family planning data. More than 70,000 items, mostly dated from 1971 through the present, are currently stored in the system. This existing database, which was developed cooperatively with other universities and government programs, including Columbia University's Center for Population and Family Health, is being expanded and improved. It is expected that POPLINE will become part of the U.S. National Library of Medicine's MEDLARS system in 1980. Requests for literature searches and other materials may be addressed to POPLINE, Population Information Program, 624 North Broadway, Baltimore, MD 21205, USA.

The Population Information Program is issued with the support of the United States Agency for International Development and the Department of Population, Family and Health, Johns Hopkins University. It is a part of the Johns Hopkins University Population Center, which is headed by John F. Kantner, Ph.D.

BEST AVAILABLE COPY

MICHIGAN STATE UNIVERSITY
INSTITUTE FOR INTERNATIONAL STUDIES IN EDUCATION
NON-FORMAL EDUCATION INFORMATION CENTER
College of Education Phone: (517) 355-5522
Lansing, MI 48924 Founded: 1974
Joan M. Claffey, Director

RELATED ORGANIZATIONS: Funding is supplied by the U.S. Agency for International Development.

DESCRIPTION OF SYSTEM OR SERVICE: The NON-FORMAL EDUCATION INFORMATION CENTER was established to assist those working on behalf of persons in the developing world. It operates the NFE Exchange, comprising 2500 members in 110 countries, to collect documents and provide research and information services to planners and practitioners of non-formal education.

SCOPE AND/OR SUBJECT MATTER: Non-formal education for development, including theory, agriculture, health and nutrition, management, community development, vocational training, and basic education for adults and out-of-school youths.

INPUT SOURCES: Documents and resources are acquired through the NFE Exchange membership.

HOLDINGS AND STORAGE MEDIA: Collection consists of 2500 reports, papers, and case studies; 1000 bound volumes; and 100 periodical subscriptions.

PUBLICATIONS: NFE Exchange (bimonthly newsletter); other publications include study team reports, discussion papers, supplementary papers, and monographs.

SERVICES: Manual literature searching and referrals, as described above, are main services.

CLIENTELE/AVAILABILITY: Services are primarily for development planners and practitioners engaged in non-formal education.

CONTACT: Joan M. Claffey, Director, Non-Formal Education Information Center.

NORTH CAROLINA STATE UNIVERSITY
TOBACCO LITERATURE SERVICE
2314 D.H. Hill Library Phone: (919) 737-2836
Raleigh, NC 27607
Carmen M. Marin, Director

STAFF: 2 information and library professional; 2 clerical and non-professional.

DESCRIPTION OF SYSTEM OR SERVICE: The TOBACCO LITERATURE SERVICE searches scientific literature for material on Nicotiana which is abstracted, indexed, and published in Tobacco Abstracts. The SERVICE also assists researchers and others with searches on special subjects relating to tobacco.

SCOPE AND/OR SUBJECT MATTER: Tobacco science, including chemical and physical properties; climatological factors; cultural practices; diseases; economics; marketing; production and policy; general reports and information; genetics and varieties; harvesting and curing; insects; manufacturing technology; physiology and biochemistry; and seedling production.

INPUT SOURCES: Scientific journals, papers of symposia and meetings, books received by the D.H. Hill library, and state and federal documents.

PUBLICATIONS: Tobacco Abstracts (monthly except combined issue for July and August)--the December issue is an annual subject and author index.

SERVICES: In addition to abstracting and indexing, the SERVICE performs manual literature searches, referrals, and provides an SDI service, Tobacco Reprint Series, consisting of reprints of papers by research scientists at North Carolina State University which are mailed to a selected list of scientists.

CLIENTELE/AVAILABILITY: There are no restrictions on services.

CONTACT: Carmen M. Marin, Director, Tobacco Literature Service.

SMITHSONIAN INSTITUTION

SMITHSONIAN SCIENCE INFORMATION EXCHANGE (SSIE)

Room 300

1730 M St., N.W.

Washington, DC 20036

David F. Marney, Ph.D., President

Phone: (202) 381-4211

Founded: 1949

STAFF: 47 information and scientific professional; 7 management professional; 57 technical and clerical.

DESCRIPTION OF SYSTEM OR SERVICE: SMITHSONIAN SCIENCE INFORMATION EXCHANGE, INC. (SSIE) collects, indexes, stores, and disseminates prepublication descriptions of ongoing and recently-completed research projects in all fields of the life and physical sciences. By providing a source for information on research projects from inception until the time progress or final reports are presented at professional meetings or in the literature, SSIE assists scientists, research program managers, information specialists, and policymakers in avoiding unnecessary duplication of research efforts. One-page Notices of Research Projects (NRP's) are collected when work on a project is begun, and contain a concise description of project plans for the coming year. NRP's include the supporting organization name and grant, contract, or control number; project title; principal and coinvestigator names and departments; performing organization name and address; period for the description and fiscal year; project funding, when provided; plus a 200-word summary which is usually prepared by the principal investigator of the work to be performed. Descriptions for projects continuing over a period of year are updated annually, and file contents are updated daily. Searches of the file can be made by subject, organization, geographic location, investigator name, or by combinations of similar search parameters.

SCOPE AND/OR SUBJECT MATTER: The data base is composed of descriptions of basic and applied research projects in all fields of science including agriculture, behavioral sciences, biological sciences, chemistry and chemical engineering, earth sciences, electronics and electrical engineering, engineering, materials, mathematics, medical sciences, physics, social sciences, and interdisciplinary areas such as energy, environmental sciences, and information science.

INPUT SOURCES: Over 1,300 supporting organizations contribute information to the file. These include federal, state, and local government agencies; nonprofit associations and foundations; colleges and universities; and foreign research organizations. About 30% of the file covers federally-sponsored research projects, both extramural and intramural.

HOLDINGS AND STORAGE MEDIA: The active search file contains descriptions of research projects initiated or completed during the past two years. Older project information is stored in an historical file. The active file numbers more than 200,000 project descriptions. Approximately 125,000 new or updated Notices of Research Projects are processed each year.

PUBLICATIONS: SSIE Science Newsletter (10 issues per year)--lists the newest research information package titles and other search services, and contains articles of interest to the scientific community. Under contract arrangements, SSIE translates ongoing research information into catalog format. Examples of such publications prepared by SSIE in the past are the Water Resources Research Catalog, information on International Research and Development Activities in the Field of Energy, and special compilations in cancer research. These documents are normally published by either the U.S. Government Printing Office or the U.S. National Technical Information Service.

MICROFORM PRODUCTS AND SERVICES: Project information in SSIE's historical file is stored on microfilm.

COMPUTER-BASED PRODUCTS AND SERVICES: SSIE operates a fully automated search and retrieval system inhouse. Searches are conducted online in an interactive mode, and search results are output on high-speed printers for professional review. It is also possible to formulate administrative project information into tabulation form in a variety of data element sequences. Totals are provided for number of projects with and without funding information, as well as for funding themselves. Project information can be arranged into catalog format on magnetic tapes suitable for automated photocomposition. Catalogs normally contain project descriptions arranged by chapters according to subject contents, plus subject, performing organization, supporting organization, investigator and project number indexes. Other computerized services include standard format magnetic interchange tapes for subsets of the file, and automatic SDI service for specific search topics. The entire data base is also available for online access through System Development Corporation.

OTHER SERVICES: In response to user requests, SSIE conducts full searches inhouse and provides hard-copy results. Searches may be custom-designed to meet individual needs; or users may request information packages. Packages are subject searches on topics of his current interest that have been designed in advance. Searches can also be performed by investigator name or project number. Custom SDI service for specific search topics is available, in addition to the automatic SDI service mentioned above. The Exchange also offers indexing, information analysis, specialized data collection, and other similar services as required.

CLIENTELE/AVAILABILITY: Search services are available with restrictions at fees which are based on the services required. Fee schedules are available on request.

REMARKS: Under contract with the U.S. National Cancer Institute, SSIE operates the Current Cancer Research Project Analysis Center (CCRESPAC) for the International Cancer Research Data Bank (ICRDB) program. CCRESPAC activities include production of the CANCERPROJ and CLINPROT data bases searchable through the U.S. National Library of Medicine's MEDLINE system, as well as preparation of technical bulletins and special listings of cancer research projects in progress around the world.

CONTACT: Janet D. Goldstein, Marketing Manager, Smithsonian Science Information Exchange.

SOLAR ENERGY INFORMATION SERVICES (SEIS)

3 Second Ave.

Phone: (415) 347-2640

P.O. Box 204

San Mateo, CA 94401

RELATED ORGANIZATIONS: Solar Energy Information Services is an affiliate of the Solar Energy Consulting Group.

DESCRIPTION OF SYSTEM OR SERVICE: SOLAR ENERGY INFORMATION SERVICES (SEIS) is an information and technology transfer company specializing in researching, compiling, publishing and marketing of solar energy information on a worldwide basis.

SCOPE AND/OR SUBJECT MATTER: The field of solar energy, including heating and cooling, solar thermal and bioconversion technologies.

INPUT SOURCES: Journal articles, government publications, international materials, industry information and statistics, and data bases.

PUBLICATIONS: SEIS will develop customized publications to a client's specifications including: abstract compilations, bibliographies, correspondence courses, handbooks, R&D summaries, and state-of-the-art reviews. A Publications List of proprietary directories, guides, and surveys is available upon request.

COMPUTER-BASED PRODUCTS AND SERVICES: Data base and retrospective searches are offered.

OTHER SERVICES: Additional services offered by SEIS are audiovisual materials preparation, consulting, compilation, document retrieval, market research, and reference services; bibliographic, current awareness, and literature searches; and seminar, conference, and workshop sponsorship. The SolarSearch inquiry service is also offered.

CLIENTELE/AVAILABILITY: Services are offered on a fee basis.

UNITED NATIONS

FOOD AND AGRICULTURE ORGANIZATION (FAO)

DOCUMENTATION CENTER

Via delle Terme di Caracalla

Rome, Italy

R. Gnany, Chief

Phone: 5797

Founded: 1966

STAFF: 4 information and library professional; 1 management professional; 14 technicians; 1 clerical and nonprofessional.

DESCRIPTION OF SYSTEM OR SERVICE: The United Nations Food and Agriculture Organization (FAO) DOCUMENTATION CENTER is responsible for analyzing, indexing, and storing all FAO literature produced at Headquarters, in Regional Offices, and through field projects. It uses a computer system called FAIRS (FAO Agricultural Information Storage and Retrieval System) to produce current awareness and retrospective bibliographic publications, and KWOC indexes. The DOCUMENTATION CENTER also acts as a research and pilot center for technical assistance agricultural projects in developing countries, and participates in documentation and network activities at the international, regional, and national levels.

SCOPE AND/OR SUBJECT MATTER: Agriculture; forestry; fisheries; all aspects of food and nutrition.

INPUT SOURCES: All FAO material produced at Rome Headquarters, Regional Offices, and through various technical assistance projects in developing countries. Activities of FAO and its member countries are documented by: 1) institutions, research centers, and suppliers; 2) research projects and meetings; 3) individual experts; 4) films, bibliographies, equipment, documents, and descriptors; and 5) interconnecting networks.

HOLDINGS AND STORAGE MEDIA: Holdings include a master file on tape of 60,000 bibliographic descriptions including indexed abstracts, plus original copies of each item, and microfiche duplicates of approximately 20,000 of the original documents.

PUBLICATIONS: FAO Documentation-Current Bibliography (monthly)-January 1967 to date. Special retrospective indexes by originating division, project, or subject, are issued irregularly, as needed.

MICROFORM PRODUCTS AND SERVICES: All out of print FAO publications and documents are reproduced on microfiche. Microfiche is issued as A6 (105x148mm) format at a per fiche charge; paper copy of material may be obtained at a per page charge.

COMPUTER-BASED PRODUCTS AND SERVICES: FAIRS uses a modified version of the ISIS (Integrated Scientific Information System) to produce current awareness and retrospective bibliographic publications and KWOC indexes. FAIRS is also used for cataloging and processing monographic literature entering the FAO library, and the production of monthly and annual book catalogs.

OTHER SERVICES: The CENTER offers abstracting and indexing, computerized literature searching for outside users, microreproduction, and reference.

CLIENTELE/AVAILABILITY: All categories of users (institutions, libraries, and individuals) may use the resources of the CENTER, but restricted documents listed as such in indexes may be used by FAO staff members only. Computerized literature searching for outside users is free.

CONTACT: R. Gnany, Chief, Documentation Center.

U.S. DEPARTMENT OF THE INTERIOR
OFFICE OF LIBRARY AND INFORMATION SERVICES
NATURAL RESOURCES LIBRARY

18th & C St., N.W.
Washington, DC 20240
Mary A. Huffer, Director

Phone: (202) 343-5821
Founded: 1949

STAFF: 30 information and library professional; 2 management professional; 19 technicians; 7 clerical and nonprofessional.

DESCRIPTION OF SYSTEM OR SERVICE: The NATURAL RESOURCES LIBRARY meets the information needs of the Department of the Interior and its researchers in the area of natural resources by providing extensive library collections augmented by online access to numerous computerized data bases. From these combined resources, it offers a variety of services, including reference, referrals, manual and computerized literature searching, SDI, translations, and circulation. The LIBRARY also acts as a depository for Department of Interior publications, serves as a clearinghouse for excess materials acquired by the Department, and maintains exchange agreements with some 1200 scientific and research institutions across the world. To coordinate library and information services throughout the Department, the NATURAL RESOURCES LIBRARY has instituted the National Natural Resources Library and Information System, an organization of more than 400 libraries of all sizes belonging to the bureaus and offices of the Department of the Interior. Through this System, the field libraries are provided with the Natural Resources Library's services and expertise in computerized literature searching, automated technical processes, and other areas.

SCOPE AND/OR SUBJECT MATTER: Conservation and development of natural resources, including scientific, engineering, and legal aspects of the following topics: mining and minerals; oil, gas, and energy; land reclamation; hydroelectric power; fish and wildlife management; outdoor recreation; preservation of scenic and historic sites; and administration of Indian territorial affairs.

HOLDINGS AND STORAGE MEDIA: The Natural Resources Library consists of approximately 350,000 bound volumes, subscriptions to 4000 periodicals, 250,000 sheets of microfiche, 8000 reels of microfilm, 8000 doctoral dissertations, complete Cold Regions Research and Engineering Laboratory collection, the archives of the Department of the Interior, and documents cited in Selected Water Resources Abstracts. Additionally, a bibliographic record of all materials coming into the Library since 1974 is held in machine-readable form.

PUBLICATIONS: 1) Current Energy Titles (biweekly)—a listing of energy-related periodical articles, books, reports, and documents received by the Library; for official distribution only. 2) Current Awareness List (biweekly)—listing of recent acquisitions; available from the Monographs Branch of the Natural Resources Library. 3) Libraries and Information Services Directory, U.S. Department of the Interior (annual)—available through the Library's Field Library Services Division. Also published are various subject bibliographies, which are announced by, and available through, the U.S. National Technical Information Service (NTIS), 5235 Port Royal Rd., Springfield, VA 22161.

COMPUTER-BASED PRODUCTS AND SERVICES: 1) Literature Searching. The Natural Resources Library provides online literature searching and SDI services from data bases made available through System Development Corporation, Lockheed/DIALOG, The Information Bank (New York Times), Infomatics, Bartelle, and other systems. These data bases are also used to compile continuously updated research packages of search results in areas of significant interest, such as national parks or reclamation of surface-mined lands. The library conducts searches on demand for field libraries, or it will assist them in linking into online systems with their own terminals. 2) Technical Services. The library accesses OCLC for monograph and serials cataloging support, and it maintains its own data base, which includes cataloging records for materials acquired since 1974. Using OCLC, the library will provide cataloging services for field libraries, or it will supply them with direct access to OCLC through FEDLINK. The library also offers centralized automated acquisitions services for interested field libraries. The library's data base is used to produce a variety of special catalogs and listings, including catalogs of the

OTHER SERVICES: The Natural Resources Library also offers consulting services to bureaus and offices of the Department of the Interior to facilitate establishment, improvement, or termination of field libraries.

CLIENTELE/AVAILABILITY: The Natural Resources Library is open to the public, although some specialized services are available to Interior personnel only.

CONTACT: Mary A. Huffer, Director, Natural Resources Library; for information on the National Natural Resources Library and Information System, contact P.M. Haymond, Chief, Field Library Services Division, phone (202) 343-2267.

U.S. DEPARTMENT OF THE INTERIOR
 OFFICE OF WATER RESEARCH AND TECHNOLOGY (CWRT)
 WATER RESOURCES SCIENTIFIC INFORMATION CENTER (WRSIC)
 18th & C Sts., N.W., Room 1308 Phone: (202) 343-2435
 Washington, DC 20240 Founded: 1966
 Raymond A. Jensen, Manager

STAFF: 1 Information and library professional; 1 management professional; 1 systems analyst; 3 clerical and nonprofessional.

DESCRIPTION OF SYSTEM OR SERVICE: The WATER RESOURCES SCIENTIFIC INFORMATION CENTER (WRSIC) disseminates scientific and technical information to the water resources management and research community through print and computer-based services. It prepares a major abstracts journal, *Selected Water Resources Abstracts (SWRA)*, and compiles a computerized data base holding the same information and available for online searching. It also publishes state-of-the-art reviews and periodic bibliographies, and provides technical consultation and reference services. WRSIC services are extended throughout the country by means of a network of five cooperating water resource research centers, which are listed at the end of this entry.

SCOPE AND/OR SUBJECT MATTER: Water resources, including: supply, conservation, management, protection, law, engineering, planning, and pollution; water-related aspects of the natural, physical, and social sciences.

INPUT SOURCES: Input consists of journals, research reports, research-in-progress statements, monographs, patents, symposia and conference proceedings, and abstracting services; sources of this input include network members, designated centers of competence, some 51 university water resource research institutes, and contractors of the CWRT and other federal government agencies.

HOLDINGS AND STORAGE MEDIA: The WRSIC machine-readable data base holds over 100,000 abstracts with related bibliographic information, dating from 1968 to the present. Full-text copies of all cited articles and documents are held by the Department's Natural Resources Library.

PUBLICATIONS: 1) *Selected Water Resources Abstracts-SWRA* (semi-monthly)--available by subscription; 2) *Water Resources Research Catalog* (annual); 3) *Thesaurus of Water Resource Terms*, 1971; and various bibliographies and reviews.

COMPUTER-BASED PRODUCTS AND SERVICES: The WRSIC data base, which is also known as *Selected Water Resources Abstracts (SWRA)* or *Water Resources Abstracts (WRA)*, is available for online searching as part of the DCS/RECON system; WRSIC headquarters and the regional network members are tied into the system.

CLIENTELE/AVAILABILITY: Services are available without restrictions.

REMARKS: All services, including computerized searching of the water abstracts data base, are available through the following five regional centers of the Water Resources Scientific Information Center Network: 1) Cornell University, Water Resources and Marine Sciences Center, 468 Hollister Hall, Ithaca, NY 14850; 2) North Carolina State University, Water Resources Research Institute, 124 Riddick Bldg., Raleigh, NC 27607; 3) University of Arizona, Water Resources Research Center, 345 N. Park, Tucson, AZ 85721; 4) University of Wisconsin, Water Resources Center, 215 N. Randall Ave., Madison, WI 53706; 5) Virginia Polytechnic Institute and State University, Water Resources Research Center, Blacksburg, VA 24061.

ADDENDUM: The Office of Water Research and Technology (CWRT) was formerly known as the Office of Water Resources Research (OWRR).

CONTACT: Raymond A. Jensen, Manager, Water Resources Scientific Information Center.

U.S. NATIONAL INSTITUTE OF EDUCATION
ERIC CLEARINGHOUSE FOR SCIENCE, MATHEMATICS, AND ENVIRONMENTAL EDUCATION (ERIC/SMEAC)

Ohio State University
1200 Chambers Rd.
Columbus, OH 43212
Robert W. Howe, Director

Phone: (614) 422-6717
Founded: 1966

STAFF: 6 information and content professional; 1 management professional; 2 technicians; 4 clerical and nonprofessional.

RELATED ORGANIZATIONS: ERIC/SMEAC is maintained at Ohio State University for the U.S. National Institute of Education. The Institute is a unit of the U.S. Department of Health, Education and Welfare.

DESCRIPTION OF SYSTEM OR SERVICE: The ERIC CLEARINGHOUSE FOR SCIENCE, MATHEMATICS, AND ENVIRONMENTAL EDUCATION (ERIC/SMEAC) is responsible for the acquisition, analysis, storage, retrieval, and dissemination of reports dealing with science, mathematics, and environmental education on all levels. ERIC/SMEAC is concerned with media applications in its field and with the impact of interest, intelligence, values, and concept development upon learning.

SCOPE AND/OR SUBJECT MATTER: Science, mathematics, and environmental education.

INPUT SOURCES: Research reports, published literature, bibliographies, curriculum guides, and instructional materials.

HOLDINGS AND STORAGE MEDIA: Collection numbers 24,000 documents with 87 current serial subscriptions.

PUBLICATIONS: 1) Fact sheets and Bulletins (periodic)—available free on request. 2) Science Education 1966-72; 3) Mathematics Education 1966-72; and 4) Environmental Education 1966-72. The three publications above are compilations of materials prepared by the Clearinghouse in cooperation with Education Associates, Inc. of Worthington, OH and Ohio State University. Each volume contains abstracts, a descriptor index, an identifier index, an author, and an institutional author index. 1973-74 supplements are available in all three fields. ERIC/SMEAC publishes over 40 documents annually, including research reviews, program descriptions, directories, and instructional materials. A publications list is available on request.

MICROFORM PRODUCTS AND SERVICES: See entry for U.S. NATIONAL INSTITUTE OF EDUCATION - EDUCATIONAL RESOURCES INFORMATION CENTER - ERIC DOCUMENT REPRODUCTION SERVICE.

COMPUTER-BASED PRODUCTS AND SERVICES: The Clearinghouse offers computer searches of the ERIC data base. Searches are available on a fee basis. For further information about computerized services see the entry for U.S. NATIONAL INSTITUTE OF EDUCATION - EDUCATIONAL RESOURCES INFORMATION CENTER - ERIC PROCESSING AND REFERENCE FACILITY.

OTHER SERVICES: Additional services include abstracting and indexing; advisory and consulting services, as time permits; data collection and analysis; research in user services and information applications; and interlibrary loan. SDI services are also offered.

CUSTOMER/AVAILABILITY: Services are available to all without restrictions. Publications can be purchased from the ERIC/SMEAC Information Reference Service or from the ERIC Document Reproduction Service, P.O. Box 190, Arlington, VA 22210.

REMARKS: CLEARINGHOUSE was formerly known as the ERIC Clearinghouse for Science and Mathematics Education (ERIC SMAEC).

CONTACT: Robert W. Howe, Director, ERIC Clearinghouse for Science, Mathematics, and Environmental Education.

UNIVERSITY OF ARIZONA
 OFFICE OF ARID LAND STUDIES (OALS)
 ARID LANDS INFORMATION SYSTEM (ALIS)
 845 N. Park Phone: (602) 884-1955
 Tucson, AZ 85719 Founded: 1964
 Lynn Lybeck, Coordinator
 Arid Lands Information Center

STAFF: 1 1/2 Information and library professional; 1 management professional; 1 technician; 1 1/2 clerical and nonprofessional.

RELATED ORGANIZATIONS: Support is provided by the U.S. National Aeronautics and Space Administration, U.S. Agency for International Development, U.S. Geological Survey, U.S. Office of Water Resources Research, U.S. Office of Economic Opportunity, U.S. Corps of Engineers, and by various Arizona state agencies.

DESCRIPTION OF SYSTEM OR SERVICE: The ARID LANDS INFORMATION SYSTEM (ALIS) is a computerized bibliographic information bank consisting of an expanding thesaurus of arid-lands terminology, a substantial bank of citations, a program for storage and retrieval, and a storage base of approximately 6000 documents. The thesaurus is constructed from analysis of literature citations, with continuous computer-produced updates. ALIS is currently building its data base and issuing computer-produced abstracts and bibliographies.

SCOPE AND/OR SUBJECT MATTER: Worldwide problems in the development, regeneration, and understanding of the world's deserts and their adjacent arid and semiarid borders, with emphasis on their physical and biological environment.

INPUT SOURCES: Journals, books, dissertations, technical reports, international agencies documentation, publications of foreign governments and institutions.

HOLDINGS AND STORAGE MEDIA: The ARID LANDS INFORMATION SYSTEM makes no attempt to collect standard documents but works only with bibliographic information; the libraries of the University of Arizona and other institutions are available for use by ALIS staff. Holdings of computerized data include citations with abstracts (retrospective) plus current awareness input.

PUBLICATIONS: 1) Arid Lands Abstracts (irregular)--no. 1, Jan. 1972-; 2) Arid Lands Resource Information Papers (occasional)--no. 1, 1972-; 3) OALS Bullerins (occasional)--no. 1, 1972-; 4) Deserts of the World, 1968; 5) Arid Lands in Perspective, 1969; 6) Food, Fiber and the Arid Lands, 1971; 7) Arid-Lands Research Institutions: A World Directory, 1967; 8) 75 Years of Arid-Lands Research at the University of Arizona: A Selected Bibliography 1891-1965, 1966.

MICROFORM PRODUCTS AND SERVICES: Current Trends in Arizona Water Resource Development, no. 1, 1972- --occasionally available in cassette form.

COMPUTER-BASED PRODUCTS AND SERVICES: ALIS performs computer literature searching as well as the in-house applications described above.

OTHER SERVICES: Primary services are abstracting and indexing, reference and referral services, and manual and computerized literature searching.

CLIENTELE/AVAILABILITY: Services are available without restrictions.

CONTACT: Lynn Lybeck, Coordinator, Arid Lands Information Center, Office of Arid Land Studies.

UNIVERSITY OF FLORIDA LIBRARIES
INFORMATION FOR CAMPUS, COMMUNITY, AND COMMERCE
(ICCC)
Gainesville, FL 32611 Phone: (904) 392-0341
Barbara Oliver, Head
Systems Services Unit

STAFF: Library staff includes 62 professional; 147 clerical and non-professional.

DESCRIPTION OF SYSTEM OR SERVICE: INFORMATION FOR CAMPUS, COMMUNITY, AND COMMERCE (ICCC) provides library and information services which include a demographic data base, online literature searching, and computerized cataloging.

SCOPE AND/OR SUBJECT MATTER: Agriculture, art and architecture, business, economics, education, history, law, literature, medicine, music, natural science, science and technology.

INPUT SOURCES: Commercially-available data bases, books, microforms, audiovisual materials, maps, charts, and periodicals.

HOLDINGS AND STORAGE MEDIA: Collection consists of 1,756,500 books and bound periodical volumes; microforms; audiovisual materials; maps; and 20,495 periodical subscriptions.

COMPUTER-BASED PRODUCTS AND SERVICES: Online searching is conducted using data bases made available through Lockheed/DIALOG and System Development Corporation. The Information Bank (New York Times) and Technotec (Control Data Corporation) data bases are also searched. Machine-readable files of demographic data (particularly census data for Florida) are maintained. The library uses the OCLC cataloging system.

CLIENTELE/AVAILABILITY: Open to the public.

CONTACT: Barbara Oliver, Head of Systems Services Unit, ICCC.